

Trucking Country: Food Politics and the Transformation of Rural Life in Postwar America

by

Shane L. Hamilton

B.A. History

University of Wisconsin-Madison, 1998

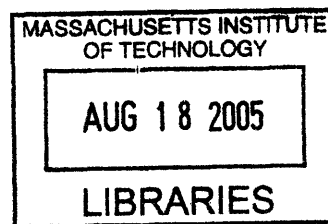
SUBMITTED TO THE PROGRAM IN HISTORY AND SOCIAL STUDIES OF SCIENCE AND TECHNOLOGY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY IN HISTORY AND SOCIAL STUDIES OF SCIENCE AND TECHNOLOGY
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 2005

(c) 2005 Shane L. Hamilton. All rights reserved.

The author hereby grants to MIT permission to reproduce
and to distribute publicly paper and electronic
copies of this thesis document in whole or in part.



Signature of Author: _____
Program in History and Social Studies of Science and Technology
February 25, 2005

Certified by: _____
Deborah K. Fitzgerald
Professor of the History of Technology
Thesis Supervisor

Certified by: _____
Merritt Roe Smith
Leverett Howell and William King Cutten Professor of the History of Technology
Thesis Committee Member

Certified by: _____
Meg Jacobs
Associate Professor of History
Thesis Committee Member

Accepted by: _____
Rosalind Williams
Robert M. Metcalfe Professor of Writing
Director, Program in Science, Technology, and Society

ARCHIVES

TRUCKING COUNTRY
FOOD POLITICS AND THE TRANSFORMATION
OF RURAL LIFE IN POSTWAR AMERICA

by

SHANE HAMILTON

Submitted June 2005 to the Program in History
and Social Studies of Science and Technology in
partial fulfillment of the requirements for the
Degree of Doctor of Philosophy

Abstract

Trucking replaced railroads as the primary link between rural producers and urban consumers in the mid-twentieth century. With this technological change came a fundamental transformation of the defining features of rural life after World War II. Trucking helped drive the shift from a New Deal-era political economy—based on centralized political authority, a highly regulated farm and food economy, and collective social values—to a postwar framework of anti-statism, minimal market regulation, and fierce individualism. Trucking and rural truck drivers were at the heart of what I call the "marketing machine," a new kind of food economy that arose after World War II, characterized by decentralized food processors and supermarkets seeking high volume, low prices, and consistent quality to eliminate uncertainties from the food distribution chain. This marketing machine developed as a reaction against the statist food and farm policies of the New Deal. Government agricultural experts—economists, engineers, and policymakers—encouraged the growth of highway transportation in an effort to redefine the "farm problem" as an industrial problem, an issue to be solved by rural food processors and non-unionized "independent" truck drivers rather than price supports or acreage controls.

Thesis Supervisor: Deborah K. Fitzgerald

Title: Professor of the History of Technology

**Trucking Country: Food Politics and the Transformation of
Rural Life in Postwar America**

by

Shane L. Hamilton

B.A. History

University of Wisconsin–Madison, 1998

SUBMITTED TO THE PROGRAM IN HISTORY AND SOCIAL STUDIES OF SCIENCE
AND TECHNOLOGY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF

DOCTOR OF PHILOSOPHY IN HISTORY AND SOCIAL STUDIES OF SCIENCE AND
TECHNOLOGY
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 2005

(c) 2005 Shane L. Hamilton. All rights reserved.

The author hereby grants to MIT permission to reproduce
and to distribute publicly paper and electronic
copies of this thesis document in whole or in part.

Table of Contents

LIST OF ILLUSTRATIONS.....	VII
ACKNOWLEDGMENTS	IX
ACRONYMS USED IN THE TEXT.....	XI
ABSTRACT	XIII
INTRODUCTION.....	1
<i>Methodology and Historiography</i>	<i>15</i>
CHAPTER 1: LONG-HAUL TRUCKING AND THE TECHNOPOLITICS OF INDUSTRIAL AGRICULTURE	23
<i>Trucking and Agriculture before World War II</i>	<i>24</i>
<i>Turning the Farm Problem into an Industrial Problem</i>	<i>40</i>
<i>The Technopolitics of Flexible Transportation</i>	<i>51</i>
<i>Conclusion.....</i>	<i>79</i>
CHAPTER 2: FROM THE MILK MAN TO THE MILK HAULER.....	81
<i>The New Deal and the "Milk Problem"</i>	<i>81</i>
<i>The Milwaukee Milk Survey and the "Ideal Distribution System".....</i>	<i>96</i>
<i>World War II and the Continuing Milk Problem.....</i>	<i>102</i>
<i>The Postwar "Ideal Distribution System"</i>	<i>112</i>
The End of Home Delivery	113
The Bulk Tank System	121
The Modern Milk Hauler.....	130
<i>Conclusion.....</i>	<i>138</i>
CHAPTER 3: BEEF TRUSTS AND ASPHALT COWBOYS.....	141
<i>Beef Production and the Problem of Monopoly</i>	<i>142</i>
<i>Trucking and the Dismantled Monopoly, 1930s-1950s.....</i>	<i>159</i>
Direct Marketing.....	160
The Price of Beef	169
Rural Meatpacking	183

<i>The Re-Emergent Monopoly, 1960s-1980s</i>	190
The Modern Feedlot	191
"Eat Beef, Stay Slim"—The Rise and Fall of Supermarket Monopoly Power	202
The "Logic" of Boxed Beef	206
Asphalt Cowboys.....	219
CHAPTER 4: THE FLEXIBILITY OF FROZEN FOOD.....	229
<i>"A Remarkably Perfect Piece of Merchandise"</i>	230
<i>An Essential Industry</i>	249
<i>Just-in-Time Distribution</i>	255
<i>The Political Economy of Convenience</i>	279
<i>Conclusion</i>	308
CHAPTER 5: THE TRUCK DRIVING MAN IN THE RURAL INDUSTRIAL LANDSCAPE.....	311
<i>The Rural Industrial Landscape</i>	312
<i>Getting off the Farm, But Staying Country</i>	317
<i>The Wandering Man</i>	338
<i>"A Truck Does Not a Trucker Make"</i>	351
<i>"Truckers Ain't Organization People!"</i>	360
<i>Conclusion</i>	386
CONCLUSION	389
WORKS CITED.....	395

List of Illustrations

FIGURE 1.1: A TYPICAL STRAIGHT TRUCK OF THE 1930S	58
FIGURE 1.2: A SEMI-TRAILER OF THE 1950S	59
FIGURE 1.3: GROCERY STORE IN DOWNTOWN KNOXVILLE, TN, 1959	65
FIGURE 1.4: MODEL OF IDEAL FOOD DISTRIBUTION CENTER, 1959	66
FIGURE 1.5: TRACTOR-TRAILER DELIVERY TO A SUPERMARKET, 1943	67
MAP 2.1: WISCONSIN AND ILLINOIS MILKSHEDS, 1932	87
FIGURE 2.1: BORDEN MILK COMPANY DELIVERYMEN	118
FIGURE 2.2: MILK HAULER UNLOADING CANS AT RECEIVING STATION	122
FIGURE 2.3: BULK MILK TRUCK	123
MAP 3.1: MEATPACKER BRANCH HOUSES IN 1916.....	150
MAP 3.2: STOCKYARD LOCATIONS AND BEEF CATTLE ON FARMS IN 1916	152
MAP 3.3: MEATPACKER FACTORIES IN 1916	153
MAP 3.4: MEATPACKER LOCATIONS AND BEEF CATTLE ON FARMS IN 1959.....	186
MAP 3.5: THE FEEDLOT BELT AND FEED GRAIN PRODUCTION IN 1965	193
MAP 3.6: RURAL MEATPACKING IN THE 1970S.....	210
FIGURE 4.1: CLARENCE BIRDSEYE'S 20-TON BELT FREEZER	234
FIGURE 4.2: AERIAL PHOTOGRAPH OF SEABROOK FARMS.....	242
MAP 4.1: BIRDS EYE FROZEN FOOD PLANTS, 1949	265
FIGURE 4.3: SEABROOK FARMS TRUCK WITH REEFER	268
MAP 4.2: TRUCK TERMINALS FOR FROZEN FOOD, 1947	269
FIGURE 4.4: THERMO KING MODEL R	273
MAP 4.3: MAJOR FROZEN FOOD FACTORIES, 1968.....	302
FIGURE 5.1: A NEATLY DRESSED TRUCK DRIVER	326
FIGURE 5.2: JOE AND JESS JACA OF JACA TRUCK LINES	329
FIGURE 5.3: A TACHOGRAPH, OR "WATCHMAN IN THE CAB"	342
FIGURE 5.4: A "COMPANY DRIVER" RECEIVES A STEADY PAYCHECK.....	350
FIGURE 5.5: THE BANDIT	381

All images reproduced by permission.
Maps by Shane Hamilton (all rights reserved).

Acknowledgments

What a long old haul the writing of this dissertation has been, to paraphrase Red Simpson. I had no idea how many people would keep me headed in the right direction as I struggled to deliver the goods on time.

The librarians and archivists who suffered my endless requests for dusty books and boxes deserve special thanks. Harry Miller at the Wisconsin Historical Society, Joe Schwartz at the National Archives, Dawn Oberg at the Country Music Hall of Fame, the entire staff of the Smithsonian Institution Archives Center, Bill Johnson at the American Truck Historical Society, and Olga Montgomery at the Finney County Historical Society selflessly shared their time and knowledge and pointed me to sources I never could have found on my own. Robert Vandivier and Earl and Ty Brookover welcomed me and my tape recorder into their lives; I only hope I have done their stories justice.

The students, faculty, and staff of the Department of Science, Technology, and Society at the Massachusetts Institute of Technology made my graduate school experience intellectually stimulating and downright enjoyable. I was particularly lucky to discuss the intertwined histories of agriculture, environment, and science and technology with David Lucsko, Leo Marx, Jamie Pietruska, Sara Pritchard, Harriet Ritvo, Jennifer Leigh Smith, William J. Turkel, and Anya Zilberstein.

I have been extremely fortunate to receive funding from a number of institutions. The National Science Foundation provided an indispensable Dissertation Improvement Grant. Doctoral fellowships from the Dibner Institute for the History of Science and Technology, the Smithsonian Institution's National Museum of American History, and the American Political Development Program at the Miller Center of Public Affairs not only provided me with time and space to write, but also put me in touch with a host of scholars whose work has inspired me more than they may realize. I particularly need to thank two of my mentors: Pete Daniel, who presided over the weekly gathering of thirsty Smithsonian scholars, and Edmund P. Russell at the Miller Center, whose sage advice on writing and presenting I will sorely miss. Brian Balogh, Sid Milkis, Chi Lam, and my fellow Fellows at the Miller Center made the final year of

dissertating as rewarding as anyone could hope. At a crucial juncture in the writing process, the Royal Institute of Technology in Stockholm welcomed me and provided me with a chance to view U.S. history from an outsider's angle. I am especially grateful for the insights and friendship offered by Arne Kaiser, Thomas Kaiserfeld, and Per Lundin, as well as everyone who ran circles around me in innebandy and tried not to laugh at my Swedish pronunciation.

Merritt Roe Smith and Meg Jacobs have been two of my best teachers and role models. From Roe I learned the importance of using careful research to tell an engaging narrative in both writing and teaching, though I can only hope to someday emulate his ability to capture the big picture of American history with just a simple artifact or anecdote. From Meg I learned everything I know about twentieth-century American political history. Since the day Meg arrived at MIT, she generously and relentlessly challenged me to think as broadly, as critically, and with as much insight as she does.

Deborah K. Fitzgerald won the Best Graduate Advisor award from MIT while I was her student, and if it had been up to me, she would have won it every year. Deborah is both the most encouraging and the toughest scholar I have ever had the privilege to work with. She patiently showed me how to rethink and reframe the way rural and agricultural history is done, enthusiastically supporting my better ideas and firmly reining me in when I strayed too far. As a mentor, as a colleague, and as a friend, Deborah Fitzgerald has given me more than I can ever hope to repay.

Finally, I want to thank my two sisters, Sheri and Shamane, who have been my inspiration all along, even if they never quite understood why I would move from rural Wisconsin to the Big City on the East Coast only to write about the people and places that I never really left behind.

Acronyms Used in the Text

AAA	Agricultural Adjustment Administration
AHFA	American Highway Freight Association
AMS	Agricultural Marketing Service
ARS	Agricultural Research Service
ATA	American Trucking Associations, Inc.
BAE	Bureau of Agricultural Economics
BPR	Bureau of Public Roads
<i>BW</i>	<i>Business Week</i>
CBC	Consolidated Badger Cooperative
CMHF	Country Music Hall of Fame
IBP	Iowa Beef Packers
IBT	International Brotherhood of Teamsters
KSHS	Kansas State Historical Society
LTL	Less-than-Truckload (shipping)
MCA	Motor Carrier Act
NIRA	National Industrial Recovery Act
NLRB	National Labor Relations Board
NRA	National Recovery Administration
<i>NYT</i>	<i>New York Times</i>
ODT	Office of Defense Transportation
OPA	Office of Price Administration
OPS	Office of Price Stabilization
QFF	Quick Frozen Foods
RMA	Research and Marketing Act
SECC	Seabrook Educational and Cultural Center
TL	Truckload (shipping)
USDA	United States Department of Agriculture
WDC	Wisconsin Dairies Cooperative
WMHA	Wisconsin Milk Haulers Association
WRRL	Western Regional Research Laboratory
<i>WSJ</i>	<i>Wall Street Journal</i>

Introduction

Ken Nelson had already produced a string of country music hits for Capitol Records when he asked Joe Cecil "Red" Simpson to write an album of trucking songs in 1965. Nelson was a Hollywood producer, though born in Minnesota, who helped create the "Bakersfield Sound"—the chart-topping, hard-driving, rebel-rousing, explicitly working-class country music of the 1960s by artists like Buck Owens, Rose Maddox, and Merle Haggard. Red Simpson learned to play guitar and fiddle during the Depression, living in a migrant settlement outside of Bakersfield, California with his "Okie" farmworker family. By 1965 he was a highly respected songwriter in the Bakersfield scene, having penned over 30 hit tunes for the Farmer Boys and Buck Owens, including "King of Fools" and "Close up the Honky Tonks."¹

Ken Nelson had tapped Simpson's songwriting skills before, but his request of 1965 was slightly different. The astounding 1963 chart success of "Six Days on the Road," a trucking song by the previously obscure Wisconsin artist Dave Dudley, gave Nelson an idea. The time seemed ripe to establish trucking songs as a full-fledged sub-genre of country music, thereby carving out a new market segment for Capitol Records' expanding and increasingly popular country catalog. Truck drivers, reasoned Nelson, spent hours "driving long and lonely miles with only their radios for company," and might make an ideal audience for "a type and style of music and lyric with which they could personally identify."² The great market potential Nelson saw for trucking music drove him to first ask his biggest talent, Merle Haggard, to write some hit highway songs. Although Haggard would later record one of the most poetic songs of the genre—"White Line

¹ "Profiles: Ken Nelson," *CMA Close-Up* (Oct. 1964): 1-2; Dave Hoekstra, "Major Nelson," *Chicago Sun-Times*, Nov. 30, 1997, Ken Nelson File, Country Music Hall of Fame Library, Nashville, TN; Jeremy Tepper, Liner notes to *The Best of Red Simpson: Country Western Truck Drivin' Singer*, [audio compact disc] (New York: Razor and Tie / Diesel Only Records, 1999); Dixie Deen, "Six Days on the Road Puts Ravin' Dave Dudley on Country Music Map," *Music City News* 4 (July 1966): 11, 20; Bill C. Malone and Judith McCulloh, eds., *Stars of Country Music: Uncle Dave Macon to Johnny Rodriguez* (Urbana: University of Illinois Press, 1975), 326-39; Gerald W. Haslam, *Workin' Man Blues: Country Music in California* (Berkeley: University of California Press, 1999).

² Kenneth W. Fitzgerald, "The Trucker's Balladeer," *Open Road and the Professional Driver*, Apr. 1977, 44. A recent survey of truck drivers found that truck drivers' favorite music continues to be "Country/Western/Bluegrass," with 30% of respondents choosing it as their first preference and 20% choosing it as their second; the next highest category was "Rock," with 18% and 12% respectively. Dale L. Belman, Kristen A. Monaco, and Taggart J. Brooks, *Let It Be Palletized: A Portrait of Truck Drivers' Work and Lives* (Ann Arbor: University of Michigan Trucking Industry Program, 1998), 181.

Fever"—he turned Nelson down in 1965, thinking that songs about truck-stop waitresses and pinball machines might tarnish his reputation as a serious writer.³

It was up to Red Simpson then, to prove Haggard's reservations unwarranted with his first hit record as a singer, the mid-tempo "Roll, Truck, Roll," released in 1966. With lyrics about a trucker losing touch with his family, sung and spoken in Simpson's deep baritone and complimented by a sadly shimmering pedal steel guitar, the song became an instant classic on truck-stop jukeboxes and late-night AM radio. Though the only truck Red Simpson ever drove was a Good Humor ice cream delivery van, he was suddenly a "homespun, country-boy folk hero to the thousands of drivers who pilot the big transport rigs across the nation's highways." It was a "funny thing," according to Red: "It used to be that no one thought much about trucks or the people that keep them running. Now everyone—men, women, and kids all across the nation, are truck song fans."⁴ Simpson devoted two full-length albums to truckers, joining artists of the 1960s and '70s such as Red Sovine, Dave Dudley, Kay Adams, Del Reeves, the Willis Brothers, and Dick Curless in making trucking songs into the "single largest category of modern work songs."⁵

I recently asked Robert Vandivier, a retired livestock trucker with a passion for country music, what he thought of songs like "Roll, Truck, Roll" and "Six Days on the Road." Without hesitation he told me that the songs were popular with truckers because they successfully captured the "cowboy thing"—a culture of hard, lonesome work that "truckers, just like those cowboys, never should have got into," that nonetheless inspired romantic visions of masculine independence for outsiders.⁶ Perhaps the "cowboy thing" does explain why trucking songs became such an important part of the country music tradition. My impressions of the lyrics of trucking songs, however—having a personal collection of several hundred of them—is that the great majority have little or nothing to do with the idea of an "asphalt cowboy."⁷

³ Bill C. Malone, *Country Music U.S.A.*, rev. ed. (Austin: University of Texas Press, 1985), 292-98, 318-21; Bill C. Malone, *Don't Get above Your Raisin': Country Music and the Southern Working Class* (Urbana: University of Illinois Press, 2002), 137-9.

⁴ Tommy Collins, "Roll, Truck, Roll," performed by Red Simpson, Capitol single 5637 (Apr. 1966); Tepper, liner notes; Fitzgerald, "The Trucker's Balladeer."

⁵ Malone, *Country Music U.S.A.*, 320. I will return to the economic and cultural history of these songs in Chapter 5.

⁶ Vandivier interview.

⁷ I will return to this question in Chapter 5. Country music historians have developed a variety of interpretations of the phenomenon, among them Cecilia Tichi's contention that songs about trains and trucks are the product of

Something Robert said in another context during our interview probably has more bearing. "I would say about 90 percent of truckers were farmers to start with," he told me when I asked him if he thought his path into trucking was typical. His first experience as a driver came before he was tall enough to see over the steering wheel, hauling skim milk and grain to feed the livestock on his parents' southern Indiana farm during the Great Depression. After serving briefly in World War II, he was on the verge of making a downpayment on his own farm when, by chance, a local trucker advertised a sale on four 1½ ton Dodges with 20-foot livestock trailers. Without any knowledge of the livestock hauling business, Robert soon found himself running a 10-truck operation, hauling sheep, hogs, and cattle in 40- to 50-foot trailers from the Midwest to New Jersey and West Virginia.⁸ Robert Vandivier became deeply enmeshed in America's postwar agro-industrial economy, all the while maintaining an unquestioned sense of rural identity. Robert represented the market demographic sought out by Ken Nelson of Capitol Records, not because he was a "cowboy," but because he could appreciate music that combined a "country" aesthetic with the realities of working-class modernity.⁹

This dissertation seeks to show that Robert Vandivier's life story is not only typical, but that his story and others like it can illuminate the profound political, economic, and social consequences of industrialized agriculture in postwar America. Although Robert's estimate that 90 percent of truckers come from a farming background seems a bit high, evidence abounds that trucking and rural life became deeply intertwined in the years following World War II. Certainly anyone who has driven on the interstate highway system has seen hundreds of trucks carrying the products of America's farms to market. Perhaps more telling, if one were to take a detour off the interstate—as I did after my discussion with Robert Vandivier, leaving Interstate 65 for the broken blacktop of State Highway 39, on the way to Bloomington, Indiana—one is sure to see, in the driveways and side yards of rural homesteads, where many of those big rigs get parked when

American restlessness, in which country musicians are born with a cultural "gene" predisposing them to "rambling." Cecilia Tichi, *High Lonesome: The American Culture of Country Music* (Chapel Hill: University of North Carolina Press, 1994), 73-5.

⁸ Robert Vandivier, interview by the author, Nov. 22, 2003, Lebanon, IN.

⁹ The use of the term "working-class" may seem inappropriate to describe the owner of a medium-sized trucking firm. As I will argue in more detail in Chapter 5, however, the concept of "class" in late-twentieth-century rural America is about much more than whether or not an individual owns the means of production. In fact, ownership of a truck can in some ways be an explicit marker of working-class identity, in my formulation.

their drivers return home. A sociologist who interviewed dozens of truckers in 1973-74 reported that "many have rural backgrounds," lived in rural or small-town areas, and had "never done any type of work but farming or truck driving."¹⁰ The farming communities of the Midwest and West, created in the nineteenth century by expanding railroad networks, now often have empty train tracks running parallel to jam-packed highways. Why? Trucking clearly plays a major role in the lives and landscapes of rural Americans, but what is the historical significance of this observation? Did the connection between trucking and country emerge solely from the creative minds of record producers like Ken Nelson, or did trucking become "country" as part of a larger historical shift in rural American life?

This dissertation argues that the growth of long-haul trucking was both the product and producer of new forms of industrial capitalism in the postwar countryside. More precisely, I argue that trucking helped drive the shift from a New Deal-era political economy—based on centralized political authority, a highly regulated farm and food economy, and collective social values—to a postwar framework of anti-statism, minimal market regulation, and fierce individualism. The argument is not that New Dealism disappeared, but that even as the state became ever more deeply involved in structuring the agricultural economy in the twentieth century, its presence moved from being an obvious and hotly contested feature of American politics to a more subtle, hidden form of power. Key to this change was the growth of long-haul trucking. Trucks replaced railroads as the primary link between rural producers and urban consumers in the mid-twentieth century. With this technological shift came a fundamental transformation of the defining features of agricultural politics and rural life after World War II.

The argument and organization of this dissertation is based on a simple premise: People use technology to create *value*. In particular, technology produces three fundamental forms of value: political values (ideologies and conceptions of the proper uses of state power), economic value (subsistence and wealth), and social values (beliefs, attitudes, and meanings). Technology does not by itself create these values, but people use technologies to negotiate the ways power,

¹⁰ Charles Bisanz, "The Anatomy of a Mass Public Protest Action: A Shutdown by Independent Truck Drivers," *Human Organization* 36, no. 1 (1977): 63-9.

wealth, and meanings are defined and distributed.¹¹ This dissertation consequently has three major sections, each focusing in turn on the ways long-haul trucking became a tool in the postwar period for redefining the political values guiding industrial agriculture (Chapter 1), the economic geography of producing monetary value from the land (Chapters 2, 3, and 4), and the social values of rural people (Chapter 5). Taken as a whole, the chapters explain how trucking helped create and sustain explicitly anti-New Deal values regarding the workings of capitalism in the rural industrial landscape.

The first four chapters of the dissertation argue that trucking helped reshape the political and economic values encompassing rural production and urban food consumption. Trucks became essential components of what I call the postwar "marketing machine." This machinery emerged from a cooperative effort among government agricultural experts, food processors, and supermarkets to reject New Dealism—namely, price supports, acreage controls, and production quotas—as the defining political framework for American agriculture. The marketing machine's primary elements were highly mechanized farms, intensively capitalized food processors, and suburban supermarkets. Each of these elements, by practicing economies of scale and by using the latest technologies—from bulk tanks on dairy farms to boxed beef in meatpacking factories to forklifts in cold-storage warehouses—sought to reduce the costs of moving perishable food from farms to consumers. The agricultural experts, food processing firms, and supermarket managers who cooperatively constructed this postwar marketing machine sought a rationalized food economy, one in which production and consumption conformed to an ideology of efficiency. After all, growing and selling food has always been risky business—with farming inherently based on seasonal and weather-related peaks and dips in production, and with food marketing inescapably tied to the oft-changing fortunes and desires of consumers. In the mid-twentieth century, industrial visions of efficiency guided the construction of machinery intended to overcome these risks and uncertainties. Farmers, guided by government research and policymaking, used industrial-style techniques and machines to

¹¹ Lewis Mumford, *Technics and Civilization* (New York: Harcourt, 1963 [1934]); John M. Staudenmaier, *Technology's Storytellers: Reweaving the Human Fabric* (Cambridge, MA: MIT Press, 1985); Merritt Roe Smith and Leo Marx, eds., *Does Technology Drive History?: The Dilemma of Technological Determinism* (Cambridge, MA: MIT Press, 1994).

intensify and expand their operations, seeking to subdue nature's whims through sheer volume of specialized production. Tractors, hybrid seeds, pesticides, inorganic fertilizers, and giant mono-cropped fields allowed America's farmers to increase their productivity ninefold between 1940 and the late 1980s.¹² Food processors converted the raw materials farmers produced into uniform packages of saleable commodities, pursuing stable profits by purchasing and selling in volume. Brand names from Minute Maid to Wonder Bread to Perdue chicken were the end products of a vertically integrated approach to food production, in which corporate conglomerates sought control over supplies of produce, grains, and meats as well as control over the profits to be gained from marketing those items.¹³ Supermarkets in turn brought those packages to consumers, pricing them uniformly to assure constant turnover of stock. Mom-and-pop grocery stores were replaced in the postwar period by chain stores operating on profit margins so thin that only huge volumes of sales could justify the expense of the parking lot acreage needed to attract waves of suburbanites seeking foods of consistent quality at low prices.¹⁴

These rationalized nodes in the food economy required some form of transportation to tie them all together. After World War II, the movement of food from farm to consumer increasingly relied on long-haul tractor-trailers rather than railroads. The shift to trucks came not because trucking was somehow cheaper or inherently "better" than railroads, but because trucks running on highways provided a flexible means of moving goods. The flexibility of trucks—their unrestricted geographical reach, customized hauling capabilities, and their ability to haul loads on short notice directly from one point to another—proved essential for the rationalized marketing machine's operation. This was because, despite the best efforts of farmers, processors, and supermarketers to rationalize the movement of food from farm to consumer, uncertainties and risks could never be fully eliminated. Farmers could not, as a general rule, transcend seasonal or regional variations in production; nature is not so easily

¹² David Danbom, *Born in the Country: A History of Rural America* (Baltimore: Johns Hopkins University Press, 1995), 233-4.

¹³ John L. Shover, *First Majority, Last Minority: The Transforming of Rural Life in America* (De Kalb: Northern Illinois University Press, 1976), 176-89.

¹⁴ Daniel I. Padberg, *The Economics of Food Retailing* (Ithaca: Food Distribution Program, 1969), esp. 11-17; R. P. R. Tilley and R. Hicks, "Economies of Scale in Supermarkets," *Journal of Industrial Economics* 19 (Nov. 1970): 1-5.

controlled as a factory floor. Processors faced strikes from unionized workers, government intervention in business practices, and resistance from both farmers and consumers over the price and quality of food. Supermarkets, as the final link in the food distribution chain, confronted the sum total of all of these destabilizing factors, compounded by their business model based on low-margin, steady-volume sales. Trucking helped to absorb some of these uncertainties, proving adaptable to constantly changing patterns of production and consumption and regulation. The builders of the marketing machine sought control in an unpredictable world, and trucking helped provide that control.

The construction of the marketing machine entailed not only the creation of economic values of rationalization and efficiency, but also the creation of a new set of political values. From the end of World War I to the beginning of the Great Depression, science and technology had made American farms incredibly productive, leaving farmers with "surpluses"—an abundance of food that was difficult to sell at profitable prices. The core of the USDA's New Deal farm policies aimed to solve this surplus problem by limiting farmers' production, but those policies were both politically controversial and ineffective. Critics of the New Deal ridiculed production controls for destroying crops and livestock while millions of Americans were starving and poorly clothed, even as the scientific and technological bureaus of the USDA continued to encourage farmers to use pesticides, fertilizers, hybrid crops, and tractors to *increase* their production. During the 1930s and through World War II, the defining political framework for American agriculture was characterized by a strongly statist regulatory approach to the surplus problem. Policies such as price supports, acreage controls, and marketing orders were controversial from the beginning, but throughout the long New Deal they were the primary mode of negotiating the larger "farm problem"—the effort to keep commodity prices high for farmers without unduly raising consumer food prices. In the postwar period, agricultural policymakers came to see rationalized food distribution as a less obviously statist means of dealing with the farm problem, and consequently worked closely with private industry to construct the marketing machine.

The dissertation begins by exploring the ways in which the United States Department of Agriculture (USDA) became interested in new forms of marketing machinery. Importantly, two

related efforts of the USDA prior to World War II created the technological and political framework from which the postwar marketing machine would emerge. Good rural highways were the most basic component of the marketing machine. The Bureau of Public Roads, a division of the USDA until 1949, was the federal agency responsible for coordinating the construction of the nation's highway networks. Under the helm of "Chief" T. H. MacDonald, and with support from an agriculture-oriented Congress, the Bureau of Public Roads (BPR) focused its energies on constructing farm-to-market highways rather than urban expressways. Chapter One will integrate this history of rural road-building with the creation of the "agricultural exemption" clause in the Motor Carrier Act of 1935. The original intent of the Motor Carrier Act (MCA) was to limit competition in the trucking industry, preventing small start-up firms from taking business away from larger, more established companies. With pressure from the USDA and farm congressmen, however, the MCA included a clause exempting truckers hauling farm products from these regulations. The exemption was originally intended, like the BPR's farm-to-market highways, to make it possible for farmers to haul unprocessed commodities to market in their own small trucks, reducing their reliance on expensive railroad transportation.

As trucks became bigger and highways improved in the late 1940s, the agricultural exemption came to serve a very different purpose. Relatively small trucking firms, shut out from the lucrative freight hauling business by ICC market entry regulations, entered into farm product hauling in increasing numbers. Generally non-unionized, these trucking companies recruited rural men as drivers, seeing them as willing to work hard, long hours—"independently." Consequently, the USDA's marketing economists increasingly saw trucking's flexibility—couched in terms of small firms' lack of unionization and ability to undercut railroad rates—as an opportunity to achieve lower food transportation costs. The Secretary of Agriculture, relying on economists and legal experts in transportation policies, waged legal and administrative battles in the 1940s and 1950s with the ICC, large trucking companies, and railroads to keep the exemption intact despite the fact that few farmers hauled their own products to market by that time. By essentially creating a separate economy for the transportation of agricultural products, the "agricultural exemption" encouraged the growth of long-haul trucking as an integral part of postwar industrial agriculture.

The second half of Chapter One shows how the USDA's work on transportation policy played into a larger political effort to dismantle the New Deal-era approach to farm policy. The years immediately following the end of World War II saw bitter criticism of the highly regulatory approach to agriculture, from all ranges of the political spectrum. Conservatives saw production controls—such as acreage allotments—as an affront to free enterprise, while liberals viewed the USDA's price support programs—aimed at raising the price of food—as directly at odds with the Democrats' continuing efforts to increase the "purchasing power" of urban industrial laborers. Three key events in postwar agricultural policymaking proved the difficulty of resolving these tensions through traditional political means: the 1946 passage of the Agricultural Research and Marketing Act, the 1949 effort of Secretary of Agriculture Charles Brannan to fit farm policy into a broader postwar liberal agenda, and the intent of Eisenhower's Secretary of Agriculture Ezra Taft Benson to completely dismantle New Deal farm policies. These three efforts, though they all failed, demonstrated a shift within the USDA's highest policymaking structures from a New Deal-era focus on solving the problem of "overproduction" by restricting farm output, towards postwar efforts to solve the problem of "underconsumption" by increasing consumer demand. The marketing machine, with its focus on reducing transportation and distribution costs to lower consumer food prices while keeping farm incomes high, played into the USDA's desire to find an uncontroversial technological fix to the problematic legacies of the New Deal. This chapter lays the groundwork for the chapters that follow, for the USDA's efforts not only helped long-haul trucking to grow, but established an anti-regulatory framework based on close cooperation between the state and private industry that proved essential for the development of the new economic values that permeated the postwar countryside.

The heart of the dissertation comes in the next three chapters, where the focus shifts from policy disputes in Washington, D.C., to the on-the-ground building of the marketing machine in rural America. This section of the dissertation uses case studies of milk, beef, and frozen foods to show how long-haul trucking served as a tool used by both state and industry to find non-regulatory solutions to three "problems" of political economy—"fair price," monopoly, and surpluses. In these case studies we see the variety of ways in which profit-seeking industries sometimes cooperated and sometimes clashed with the state over the means by which economic

value was created in the countryside. Milk, the subject of Chapter Two, was at the center of a broad-ranging debate over the "fair price" of a food widely recognized as essential to the American diet. The price of milk created political and economic divisions between farmers, consumers, organized labor, and private milk dealers, all of whom sought government help in protecting their own definition of the fair price of milk during the 1930s. The USDA devised federal milk marketing orders as a regulatory solution to what its economists saw as the essential cause of these debates over fair price—essentially, a lack of rationality in the production and marketing of milk. The chapter traces the failure of this regulatory approach through World War II and into the 1970s, by which time agricultural experts managed to construct a technological alternative to the New Deal's approach. Tractor-trailers and highways reframed the politics of milk's price on the consumers' end by replacing home delivery with supermarket "dock delivery," and on the farmers' end by replacing milk cans with bulk tanks. The deployment of these trucking technologies turned the issue of fair price into a matter of marketplace negotiation rather than overtly political contention. At the same time, the new milk economy depended more on rural "independent" milk haulers than on urban Teamster deliverymen, demonstrating the powerful social consequences of the new marketing machine. Since most of these events played out on the local and state level, this chapter will focus on the relationship between Wisconsin dairy farmers and their two largest urban markets, Chicago and Milwaukee.¹⁵

Chapter Three examines the problem of monopoly in the beef industry. The so-called "Big Five" meatpackers (Armour, Swift, Morris, Wilson, and Cudahy) established monopolistic control over the marketing and distribution of beef in the late 19th century, concentrating capital investment in central railroad facilities, cold storage warehouses, and stockyards. In 1920 the Justice Department issued a Consent Decree, followed by Congress's passing of the Packers and Stockyards Act, intended to loosen the Big Five's grip on beef marketing. The first

¹⁵ A good deal of this story could also apply to the situation in New York state, one of the three most important dairy states along with Wisconsin and California in the twentieth century. It should be noted, however, that the California situation was unique; the state of California developed its own approach to the "milk problem" in the 1930s, encouraging the establishment of giant industrial dairy farms to produce milk at low cost. In other words, where Wisconsin/Chicago and New York state/New York City approached the milk problem as a problem of marketing, California treated it as a problem of production.

New Deal Secretary of Agriculture, Henry A. Wallace, was sympathetic to these anti-monopoly efforts and spent considerable effort enforcing the Packers and Stockyards Act to provide livestock farmers with as many alternative buyers as possible for their cattle. In the 1950s, however, the growth of long-haul trucking allowed for a decades-long reconfiguration of the geography of beef production and marketing that had far more impact on the monopoly problem than any government policies. By the late 1970s, trucking allowed certain upstart beefpackers to orchestrate a strategy of rural industrialization that, despite creating a degree of monopoly rivaling that of the old "Big Five," did not entail the political problems that had dogged the old industry. In contrast to the problem of fair price in the milk industry, the problem of monopoly in beefpacking brought a studied *inaction* on the part of agricultural policymakers, who found the problem conveniently "solved" by tractor-trailers hauling grain-fed steers and boxes of pre-cut beef. As a consequence, the beef industry became a standard bearer for all that was considered "American" about industrial agriculture—free enterprise, high productivity, and low consumer prices. The truck drivers who helped make this system work were ideal representatives of this contradictory economic culture, which paid homage to a sense of independence reminiscent of the open range of the Old West while practicing a winner-take-all approach to the spoils of industrial capitalism.

The third in-depth case study looks at frozen food in relation to the surplus problem in produce agriculture. Once frozen, food could be held in storage in freezer warehouses for up to a year before being delivered to supermarkets. As agricultural economists of the 1940s and 1950s saw it, the irregularity and unpredictability of weather—which they understood as the essential causes of the surplus problem in the production of fruits and vegetables—could be surmounted by harvesting produce in season, then distributing processed foods evenly throughout the year. In an ideal world, the freezing of foods would turn organic matter into pure abstractions capable of being transported, sold, and consumed at any time or place. Farmers would no longer be caught with troublesome seasonal or perennial surpluses, and supermarkets would have a steady supply of quality goods to sell throughout the year. Steady incomes and profits would be the ultimate result. Turning this dream into reality proved rather difficult, however, requiring significant cooperation among the USDA's agricultural engineers, frozen food farmer-processors

like Seabrook Farms of New Jersey, and the trucking industry in building the complex marketing machinery—from freezer warehouses to reliably refrigerated tractor-trailers—necessary to make mass marketing of frozen food possible in the postwar period. In the 1950s, frozen food seemed to be an ideal, non-statist solution to surplus problems in the fresh produce economy. The technology needed to achieve both the political and economic promises of frozen food, however, soon proved so complex and expensive that both goals could not be achieved simultaneously. By the mid-1960s, frozen food was no longer touted as an agro-industrial revolution, becoming instead merely an ordinary product of profit-oriented corporate capitalism.

All three of these case studies share an essential connection. Trucking, as it shifted from local hauling in the 1930s to a full-fledged long-distance alternative to railroads after World War II, created the conditions for agri-businesses and government agents to cooperate in constructing a politically uncontroversial food mass-marketing system. The "flexibility" of trucking proved instrumental in each case for providing agribusiness firms with two important capabilities: 1) the ability to relocate food processing factories deep in the countryside, and 2) the possibility of relying on non-unionized truck drivers to provide a form of social "flexibility" that made just-in-time delivery possible without dramatically raising transportation costs.

But even though the three chapters share these common themes, each of the three cases nonetheless demonstrates the unique historical contingencies that played out in the construction of the postwar marketing machine. The chapters are arranged to trace the histories of three distinct but interrelated varieties of the so-called "farm problem" of the New Deal era—"fair price," monopoly, and surpluses—that led to a variety of political and technological responses, in multiple geographical locations, and with varying degrees of regulatory intervention at different government levels. In large measure, these different shades of the farm problem arose from the characteristics of the commodities in question. Milk was, and still remains, an extremely perishable food lacking any acceptable substitute; consequently, the politics of milk have generally been highly localized—since milk could not travel far from its point of production without spoiling—and also highly contentious, since the price of milk was unaffected by economic competition from alternative products. Beef, on the other hand, could

travel relatively far even before the days of mechanical refrigeration, since beef could be moved either "on the hoof" or as "hanging quarters" with relatively little spoilage in cooled railroad cars. Although beef has always been prized by consumers as a central component of the "American standard of living," it has also faced significant competition from cheaper pork and poultry products. The politics of beef were colored by an essential tension between beef as an item of mass consumption or as a luxury food, making the question of "how much monopoly is too much?" particularly problematic. The frozen-food industry, just an infant in 1930, did not carry the historical and political baggage of either milk or beef, making possible two decades' worth of credulous claims that food production and marketing would be rationalized according to the dictates of science rather than politics. Despite these dreams of simplicity and stability, the production and sale of frozen foods required, just like milk and beef, negotiations among interest groups that could never be constrained merely to the realm of abstract economics.

The final chapter of the dissertation seeks to understand how these political and economic changes helped reshape social values in the postwar countryside, as rural Americans came to privilege the individual over the collective. Specifically, I ask how it was that rural men became enrolled as the truck drivers who did much of the literal work of the marketing machine. Did rural men choose to become truck drivers of their own volition, or were they coerced into the work by forces not of their choosing? Especially in the "exempt" agricultural and food transportation sectors of the trucking industry, most truckers worked extremely irregular hours, hauling for small, non-unionized companies. Competition in these sectors of the trucking industry made work schedules, wage rates, and occupational demands almost completely unpredictable for drivers. For a truck driver hauling farm products, the "flexibility" demanded by agricultural economists, food processors, and supermarketers often meant being asked to work for four or five straight days with almost no sleep, then being told to stay at home without pay for a week. Given such conditions, one has to ask why anyone became a trucker in the first place. For ethnographers who have studied the work lives of truckers, the answer is usually "masculinity." Truck driving in the 1950s-1970s generally offered a man wages high enough to support a family, but allowed him to think of himself as more independent and masculine than the average blue-collar worker, whose work was always under supervision and tied to a

disciplined time schedule. While this explanation has a great deal of merit, the historian has to wonder whether deeper structural factors also played a role—that is, were ideas of manhood the cause or the consequence of driving trucks through the countryside? Census reports and social science surveys from the period show that a significant percentage of truckers were either former farmers, sons of farmers, or part-time farmers. The final chapter of "Trucking Country" will argue that, as the industrial marketing machinery of the new food economy spread through the countryside—with the number of farms decreasing even as farms grew larger in size—farmers were often forced to see off-farm work as more attractive than staying on the land. Trucks made the marketing machine function, so there were plenty of them to drive, and driving big rigs came readily to rural men accustomed to long hours and cantankerous machinery. In this sense, the popular culture stereotype of truck drivers as "Bubbas" (i.e., Southern country boys) has some basis in socioeconomic fact.

Furthermore, although rural America has never been "classless," the increasingly industrial nature of the postwar rural economy encouraged a new kind of identity that combined rural values with working-class sensibilities. Nowhere was this more evident than in the stream of country songs about truckers that hit the airwaves in the 1950s, '60s, and '70s. Especially after the astounding success of Dave Dudley's 1963 hit "Six Days on the Road," Nashville record producers realized that an important market existed for songs that maintained a "country" aesthetic but dealt lyrically with the reality of industrial labor. Marketing executives in the country music industry sought to define and shape the identity of the emerging rural working class, hoping to sell records to a distinctive marketing segment. As part of the 1960s rise of country music as a nationwide, explicitly working-class genre, trucking songs helped give cultural coherence to a segment of the population that simultaneously held rural and industrial identities. The masculine ideals surrounding trucking served as a particularly effective symbol for songwriters and producers looking to identify this market segment. Trucking, both as machine and symbol, knitted together the people and places of rural America in new ways, becoming by the late 1970s a definitively "country" technology. Importantly, that symbolism fed into an abortive neo-Populist political movement in the 1970s, as truck drivers who imagined themselves to be the inheritors of the agrarian mythology of "independent" farming found their

independence challenged by both the marketing machine they made run and by global energy politics over which they had no control.

Methodology and Historiography

This dissertation emerged from an effort to unite the history of technology, the history of agriculture, and American political history by focusing on the relationships among producers, consumers, and the state. Much recent scholarship on postwar American political and social history has been devoted to understanding suburbia and the era of full-fledged mass consumption.¹⁶ But while studies of the culture and politics of suburban middle-class America abound, few scholars have explored the technological structures and political economy that made those lifestyles possible. In this sense, "Trucking Country" serves as a sequel to William Cronon's study of commodity flows (grain, meat, and lumber) in the political economy of late-nineteenth-century urbanization.¹⁷ Furthermore, "Trucking Country" expands upon the "consumption junction" methodology first proposed by Ruth Schwartz Cowan. Historians of technology have successfully used this approach, studying relationships between producers and consumers to address the larger social and political questions raised by "mainstream historians."¹⁸ But while these studies often effectively highlight the ways in which producers and consumers have shaped each others' decisions, they rarely study the actual infrastructures—the artifacts, politics, and business practices—that connect consumers to producers.

¹⁶ Elizabeth Cohen, "From Town Center to Shopping Center: The Reconfiguration of Community Marketplaces in Postwar America," *American Historical Review* 101 (Oct. 1996): 1050-81; Charles McGovern, "Consumption and Citizenship in the United States, 1900-1940," in *Getting and Spending: European and American Consumer Societies in the Twentieth Century*, ed. Susan Strasser, Charles McGovern, and Matthias Judt (New York: Cambridge University Press, 1998), 37-58; Lisa McGirr, *Suburban Warriors: The Origins of the New Right* (Princeton: Princeton University Press, 2001); Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001); Elaine Tyler May, *Homeward Bound: American Families in the Cold War Era* (New York: Basic Books, 1988); Samuel P. Hays and Barbara D. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985* (Cambridge: Cambridge University Press, 1987); Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985).

¹⁷ William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991).

¹⁸ Ruth Schwarz Cowan, "The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology," in *The Social Construction of Technological Systems*, ed. Wiebe Bijker, Thomas Hughes, and Trevor Pinch (Cambridge, MA: MIT Press, 1987), 261-80; Regina Lee Blaszczyk, *Imagining Consumers: Design and Innovation from Wedgwood to Corning* (Baltimore: Johns Hopkins University Press, 2000); Ronald R. Kline, *Consumers in the Country: Technology and Social Change in Rural America* (Baltimore: Johns Hopkins University Press, 2000).

The technological infrastructures connecting rural producers to suburban consumers in the postwar period, I argue, drove a fundamental reordering of the nation's political economy after World War II. Political historians have recently offered a number of excellent works tracing the shift from the vigorous debates over political economy of the 1930s—with alternatives ranging from anti-monopolism, full-scale socialistic economic planning, consumer-labor alliances around the idea of purchasing power, and corporate-liberal efforts to make business the guarantor of social welfare—to the unquestioned acceptance of Keynesianism and the narrowly construed politics of growth of the postwar era.¹⁹ This dissertation is deeply indebted to these histories, but also points to the significant failure of all of them to take into account what historians of technology call "technopolitics."²⁰ Rather than treating technologies as autonomous devices that have unidirectional impacts on the rest of society, or as mere adjuncts to the "high politics" of legislatures and executive actions, this dissertation examines how the technology of trucking became firmly embedded into the political realm as a means of settling otherwise intractable disputes. Trucking became "country" in the mid-twentieth century, I argue, as state and industry cooperated to build a marketing machine that would create new forms of political and economic value in the countryside. At the same time, this new form of agricultural technopolitics contributed to the larger shift in the nation's political economy towards a liberalism focused on the technical details of administratively maintaining economic growth. Like other cases in the postwar period when policymakers turned to technical means to "solve" political problems—nuclear power, smokestack pollution filters, tax policies—the result was the creation of an highly interventionist, but narrowly construed, administrative role for the

¹⁹ Alan Brinkley, *The End of Reform: New Deal Liberalism in Recession and War* (New York: Vintage Books, 1995); Meg Jacobs, *Pocketbook Politics: Economic Citizenship in Twentieth-Century America* (Princeton: Princeton University Press, 2005); Steve Fraser, *Labor Will Rule: Sidney Hillman and the Rise of American Labor* (New York: Free Press, 1991); Nelson Lichtenstein, *Walter Reuther: The Most Dangerous Man in Detroit* (Urbana: University of Illinois Press, 1995); Elizabeth Cohen, *A Consumers' Republic: The Politics of Mass Consumption in Postwar America* (New York: Knopf, 2003); Elizabeth A. Fones-Wolf, *Selling Free Enterprise: The Business Assault on Labor and Liberalism, 1945-1960* (Urbana: University of Illinois Press, 1994); Alan Wolfe, *America's Impasse: The Rise and Fall of the Politics of Growth* (New York: Pantheon Books, 1981); Robert M. Collins, "The Emergence of Economic Growthsmanship in the United States: Federal Policy and Economic Knowledge in the Truman Years," in *The State and Economic Knowledge: The American and British Experience*, ed. Mary O. Furner and Barry Supple (Cambridge: Cambridge University Press, 1990), 138-70.

²⁰ Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II* (Cambridge, MA: MIT Press, 1998), 15-17; Langdon Winner, *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (Chicago: University of Chicago Press, 1986); Michael Thad Allen and Gabrielle Hecht, eds., *Technologies of Power* (Cambridge, MA: MIT Press, 2001).

state in matters of political economy.²¹ Trucks were political technologies, used to define the contours of public policy regarding foods and farmers; at the same time, trucks as technologies shaped the economic and social structures underlying those political debates.

To extend this point, historians have explained the failure of America's postwar consumer culture to sustain a New Deal-style "purchasing power" political economy, but I argue that this failure was not only a result of fractures along lines of gender, class, and race.²² The state, in this case the U.S. Department of Agriculture, had its own interests in subduing the politics of food pricing in the postwar period. In arguing that "the state" had such an interest, I draw upon the literature of "new institutionalism" or American Political Development, which has shown that institutions of the state can and do have their own interests. Those institutional interests are shaped on the one hand by the structures of the institutions themselves (federalism, separation of powers, administrative capacity, and so forth), and on the other hand by the institutions' interactions with the larger political economy, interest groups, political parties, and social movements.²³ But in acknowledging the importance of the "new institutionalist" approach as a method for explaining the origins and impacts of policymaking, I also hope to point out the importance of taking the political role of technology into account, along with the usual suspects of administrative, regulatory, legislative, judiciary, and fiscal policy. In the case of the USDA, this is particularly important, because this government

²¹ Brian Balogh, *Chain Reaction: Expert Debate and Public Participation in American Commercial Nuclear Power, 1945-1975* (New York: Cambridge University Press, 1991); Lisa Rosner, ed., *The Technological Fix: How People Use Technology to Create and Solve Problems* (New York: Routledge, 2004); Julian E. Zelizer, *Taxing America: Wilbur D. Mills, Congress, and the State, 1945-1975* (Cambridge: Cambridge University Press, 1998).

²² Cohen, *Consumer's Republic*; Steve Fraser and Gary Gerstle, eds., *The Rise and Fall of the New Deal Order, 1930-1980* (Princeton: Princeton University Press, 1989).

²³ Stephen Skowronek, *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920* (Cambridge: Cambridge University Press, 1982); Theda Skocpol, *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States* (Cambridge, MA: Belknap Press, 1992); Richard Franklin Bensel, *The Political Economy of American Industrialization, 1877-1900* (Cambridge: Cambridge University Press, 2000); Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917* (Chicago: University of Chicago Press, 1999); Elizabeth S. Clemens, *The People's Lobby: Organizational Innovation and the Rise of Interest Group Politics in the United States, 1890-1925* (Chicago: University of Chicago Press, 1997); Richard R. John, *Spreading the News: The American Postal System from Franklin to Morse* (Cambridge, MA: Harvard University Press, 1995) and "Governmental Institutions as Agents of Change: Rethinking American Political Development in the Early Republic, 1787-1835," *Studies in American Political Development* 11 (Fall 1997): 347-80; Edmund P. Russell III, "The Strange Career of DDT: Experts, Federal Capacity, and 'Environmentalism' in World War II," *Technology and Culture* 40 (Oct. 1999): 770-96; Zelizer, *Taxing America*; Sidney M. Milkis, *Political Parties and Constitutional Government: Remaking American Democracy* (Baltimore: Johns Hopkins University Press, 1999); Meg Jacobs, William J. Novak, and Julian Zelizer, eds., *The Democratic Experiment: New Directions in American Political History* (Princeton: Princeton University Press, 2003); Brian Balogh, "The State of the State among Historians," *Social Science History* 27 (Fall 2003): 455-63.

institution, perhaps more than most administrative agencies, has consistently used science and technology to put its interests into action. Specifically, I attribute the failure of purchasing-power politics in the postwar era at least partially to the USDA's ability to successfully re-engineer the politics of food pricing in the mid-1950s, helping private industry to develop new technologies of distribution that transformed the paired issues of farm and food prices into economic, rather than political-economic, issues.

"Trucking Country" also challenges the organizational synthesis proposed by historians who see order, rationalization, corporatization, and bureaucratization as the defining features of the American political economy in the twentieth century.²⁴ The point is not to deny the importance of the rise of corporate power, a highly regulatory and administrative state, and the industrial ideal more generally in the twentieth-century economic and political landscape, but to show that this search for order was coupled to a continuing chaos in capitalist society, particularly in the context of agriculture and the rural economy. In making this point I draw upon the work of political historians and historians of business and technology who have emphasized regional diversity, constant competition, and disorganized and decentralized political forms as concomitant with, and indeed fundamental to, the rise of bureaucratic politics and economic centralization.²⁵ Trucking, I show, helped create the conditions for both orderly politics and orderly business practices in the postwar food economy, but that order emerged from, and depended on, the chaotic "flexibility" of trucking. This explains my preference for the word "machine" rather than "system" in describing the technologies of food distribution in the

²⁴ Robert Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1967); Alfred D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA: Belknap Press, 1990); Thomas P. Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore: Johns Hopkins University Press, 1983); John M. Jordan, *Machine-Age Ideology: Social Engineering and American Liberalism, 1911-1939* (Chapel Hill: University of North Carolina Press, 1994); Louis Galambos, "Technology, Political Economy, and Professionalization: Central Themes of the Organizational Synthesis," *Business History Review* 57 (Winter 1983): 471-93.

²⁵ Colin Gordon, "Why No Corporatism in the United States?: Business Disorganization and Its Consequences" *Business and Economic History* 27 (Oct. 1998): 29-46 and *New Deals: Business, Labor, and Politics in America, 1920-1935* (Cambridge: Cambridge University Press, 1994); Philip Scranton, *Proprietary Capitalism: The Textile Manufacture at Philadelphia, 1800-1885* (Cambridge: Cambridge University Press, 1983) and *Endless Novelty: Specialty Production and American Industrialization, 1865-1925* (Princeton: Princeton University Press, 1997); Stanley Vittoz, *New Deal Labor Policy and the American Industrial Economy* (Chapel Hill: University of North Carolina Press, 1987); James C. Cobb, *The Selling of the South: The Southern Crusade for Industrial Development, 1936-1990*, 2d ed. (Urbana: University of Illinois Press, 1993); Michael J. Piore and Charles F. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (New York: Basic Books, 1984); Charles F. Sabel and Jonathan Zeitlin, eds., *World of Possibilities: Flexibility and Mass Production in Western Industrialization* (Cambridge: Cambridge University Press, 1997).

postwar era, since the phrase "technological system" is generally taken to imply a highly centralized set of artifacts created primarily by engineers, with the electric power grid as its prime representation.²⁶ Trucking, in contrast, was by its very nature decentralized, making "system" an inappropriate metaphor implying order and rationality where little existed.

"Trucking Country" shows that the decentralized nature of trucking both contributed to and helped mediate the continuing chaos of capitalism in the twentieth-century American countryside. In making this point, I draw upon the work of geographers and historians who have increasingly turned their attention to the relationship between rural places and industrialization. Most important, these scholars have shown that the environmental constraints of agricultural production have shaped unique forms of industrial activity. Unlike urban factories where industrialists can exercise a great deal of control over the factors of production (workers, machines, and inputs), agriculture always has to deal with the uncontrollable nature of climate shifts, seasonal cycles, and biological indeterminacy. Using methods of economic geography, historians have shown how the relationship between urban-industrial capitalism and the non-human natural world quite literally shapes the places where agricultural resources are extracted. The fickleness of nature creates unevenness in the industrial ordering of the rural landscape, as the search for profit in agricultural production quite often trumps the search for order.²⁷

²⁶ Hughes, *Networks of Power*. Recent studies of technological systems have increasingly recognized consumers, laborers, political actors, and broad socio-cultural factors (such as gender, race, and class) as important forces contending with engineers in the construction of systems. Wiebe E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge, MA: MIT Press, 1995); Arwen P. Mohun, *Steam Laundries: Gender, Technology, and Work in the United States and Great Britain, 1880-1940* (Baltimore: Johns Hopkins University Press, 1999); Susan Douglas, *Inventing American Broadcasting, 1899-1922* (Baltimore: Johns Hopkins University Press, 1997); Rayvon Fouche, *Black Inventors in the Age of Segregation* (Baltimore: Johns Hopkins University Press, 2003); Roger Horowitz and Arwen Mohun, eds., *His and Hers: Gender, Consumption, and Technology* (Charlottesville: University Press of Virginia, 1998); Roger Horowitz, ed., *Boys and Their Toys?: Masculinity, Technology, and Class in America* (New York: Routledge, 2001).

²⁷ Cronon, *Nature's Metropolis*; Brian Kirby Page, "Agro-Industrialization and Rural Transformation: The Restructuring of Midwestern Meat Production," (Ph.D. diss., University of California-Berkeley, 1993); Brian Page and Richard Walker, "From Settlement to Fordism: The Agro-Industrial Revolution in the American Midwest," *Economic Geography* 67 (1991): 281-315; Brian Page, "Across the Great Divide: Agriculture and Industrial Geography," *Economic Geography* 72 (Oct 1996): 376-97; William Boyd and Michael Watts, "Agro-Industrial Just-in-Time: The Chicken Industry and Postwar American Capitalism," in *Globalising Food: Agrarian Questions and Global Restructuring*, ed. David Goodman and Michael Watts (London: Routledge, 1997), 192-223; Margaret FitzSimmons, "The New Industrial Agriculture: The Regional Integration of Specialty Crop Production," *Economic Geography* 62 (Oct 1986): 334-53; Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (New York: Verso, 2001); Lawrence S. Grossman, *The Political Ecology of Bananas: Contract Farming, Peasants, and Agrarian Change in the Eastern Caribbean* (Chapel Hill: University of North Carolina Press, 1998); John Soluri, "Accounting for Taste: Bananas, Mass Markets, and Panama Disease," *Environmental History* 7 (Jul. 2002): 386-

Agricultural and rural historians have tended to treat technological change as a "black box," an autonomous force that deterministically reconstructs rural life. There are informative literatures on agricultural politics, economics, and rural social history, but only a handful of scholars have probed into the unique nature of technological change in rural contexts. Furthermore, while historians of technology generally seek to understand changes in technology within a broad social context, historians of agricultural technology have generally focused only on technologies of production on farms.²⁸ "Trucking Country" opens up the "black box" of agricultural technology while simultaneously pushing the history of technology further afield. The field of agricultural history has traditionally been split into three rather distinct sub-fields: political history, economic history, and rural social history. Each of these three sub-fields takes technological change seriously, but generally treats technology as an autonomous, external force. Political historians of American agriculture tend to focus either on the Populist movement or on the rise of the New Deal system of price supports and production quotas. In both cases, technological changes figure as inevitable forces that create political problems. Populism is generally seen as a response to the economic upheavals caused by railroads, urban industrialization, and the emergence of global markets in an age of inexpensive global shipping, while New Deal commodity programs are seen as responses to the problem of overproduction brought by highly mechanized farming.²⁹ A few groundbreaking works have recently tried to remedy this situation, arguing that agricultural politics in the United States have always been tightly intertwined with technological change. In these works, technology figures as a lever of power shaped by political actors (particularly in the U.S. Department of Agriculture), not simply

410; Shane Hamilton, "Cold Capitalism: The Political Ecology of Frozen Concentrated Orange Juice," *Agricultural History* 77 (Fall 2003): 557-81.

²⁸ Deborah K. Fitzgerald, "Beyond Tractors: The History of Technology in American Agriculture," *Technology and Culture* 32 (Jan. 1991): 114-26.

²⁹ John D. Hicks, *The Populist Revolt: A History of the Farmers' Alliance and the People's Party* (Lincoln: University of Nebraska Press, 1961 [1931]); Lawrence Goodwyn, *The Populist Moment: A Short History of the Agrarian Revolt in America* (Oxford: Oxford University Press, 1978); Richard Hofstadter, *The Age of Reform: From Bryan to F. D. R.* (New York: Vintage Books, 1955); James Shideler, *Farm Crisis, 1919-1923* (Berkeley: University of California Press, 1957); Theodore Saloutos and John D. Hicks, *Twentieth-Century Populism: Agricultural Discontent in the Middle West, 1900-1939* (Lincoln: University of Nebraska Press, 1951); David E. Hamilton, *From New Day to New Deal: American Farm Policy from Hoover to Roosevelt, 1928-1933* (Chapel Hill: University of North Carolina Press, 1991); John Mark Hansen, *Gaining Access: Congress and the Farm Lobby, 1919-1981* (Chicago: University of Chicago Press, 1991); Jon Lauck, *American Agriculture and the Problem of Monopoly: The Political Economy of Grain Belt Farming, 1953-1980* (Lincoln: University of Nebraska Press, 2000); Adam D. Sheingate, *The Rise of the Agricultural Welfare State: Institutions and Interest Group Power in the United States, France, and Japan* (Princeton: Princeton University Press, 2001).

as a force that politicians respond to when it gets out of control.³⁰ Much of the impetus for this reworking of the political history of agriculture comes from work in agrarian studies of non-U.S. sites, where the use of new agricultural technologies to gain political power is often more apparent and drastic in its application.³¹

Economic historians of agriculture have an even greater tendency to treat technology as a "black box." Too often in economic histories, technology figures only as an abstract independent variable that reworks the balance among labor, capital, and land resources. Economic historians tend to be unconcerned about where a technology comes from or who deploys it for what reasons; their questions are focused more on the impacts of the technology once it is developed. Again, there are important exceptions to this generalization that have led to the formulation of "Trucking Country." A few historians of agriculture have probed deeply into the process of technological change in the business of farming, uncovering relationships of power along lines of capitalist and state authority, gender, and race.³² (Significantly, none of these authors would identify themselves primarily as economic historians.) Still, there is much room for economic histories of agriculture that do not treat technology as a mere abstraction. "Trucking Country" assumes that technological change is neither automatic nor autonomous.

Social historians of rural life have proven more willing than political or economic historians to treat technological change as socially constructed. A number of historians have recently argued that particular rural social patterns and cultural beliefs have determined the

³⁰ Pete Daniel, *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880* (Urbana: University of Illinois Press, 1985); Deborah K. Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003); Catherine McNicol Stock and Robert D. Johnston, eds., *The Countryside in the Age of the Modern State: Political Histories of Rural America* (Ithaca: Cornell University Press, 2001); Steven Stoll, *The Fruits of Natural Advantage: Making the Industrial Countryside in California* (Berkeley: University of California Press, 1998); Jack R. Kloppenburg, Jr., *First the Seed: The Political Economy of Plant Biotechnology, 1492-2000* (Cambridge: Cambridge University Press, 1988).

³¹ James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998); Akhil Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham: Duke University Press, 1998); George Yaney, *The Urge to Mobilize: Agrarian Reform in Russia, 1861-1930* (Urbana: University of Illinois Press, 1982).

³² Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979); Deborah K. Fitzgerald, *The Business of Breeding: Hybrid Corn in Illinois, 1890-1940* (Ithaca: Cornell University Press, 1990); William H. Friedland, Amy Barton, and Robert J. Thomas, *Manufacturing Green Gold: Capital, Labor, and Technology in the Lettuce Industry* (New York: Cambridge University Press, 1981); Deborah Fink, *Agrarian Women: Wives and Mothers in Rural Nebraska, 1880-1940* (Chapel Hill: University of North Carolina Press, 1992); Sally McMurtry, *Transforming Rural Life: Dairying Families and Agricultural Change, 1820-1885* (Baltimore: Johns Hopkins University Press, 1995); Neil Foley, *The White Scourge: Mexicans, Blacks, and Poor Whites in Texas Cotton Culture* (Berkeley: University of California Press, 1997).

shape of technological change on farms.³³ Even these valuable works, however, fall into a trap similar to that of political and economic histories of agriculture. By treating "rural" and "agriculture" as synonyms for "farming," rural historians generally neglect the technological changes that occur in the countryside, but *not* on farms. Furthermore, the equation of "rural" with "farming" leads most rural social historians to focus on time periods before 1945.³⁴ Given the fact that farmers have been a minority of the rural American population during the latter twentieth century, this is a troublesome methodological problem. For instance, only a handful of social histories of rural life look at such significant technological changes as the arrival of non-farm industries in rural places.³⁵ "Trucking Country" seeks to extend rural social history into the period after 1945, arguing that the great social changes in the American countryside after World War II have been tied more to industrial practice than to farming *per se*.

³³ Kline, *Consumers in the Country*; Hal S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930* (Chapel Hill: University of North Carolina Press, 1997); David B. Danbom, *The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930* (Ames: Iowa State University Press, 1979); Mary Neth, *Preserving the Family Farm: Women, Community, and the Foundations of Agribusiness in the Midwest, 1900-1940* (Baltimore: Johns Hopkins University Press, 1995); Jane Adams, *The Transformation of Rural Life: Southern Illinois, 1890-1990* (Chapel Hill: University of North Carolina Press, 1994).

³⁴ Anne B. W. Effland, "When Rural Does not Equal Agricultural," *Agricultural History* 74 (Spring 2000): 489-501.

³⁵ Melissa Walker, *All We Knew Was to Farm: Rural Women in the Upcountry South, 1919-1941* (Baltimore: Johns Hopkins University Press, 2000); Ronald L. Lewis, *Transforming the Appalachian Countryside: Railroads, Deforestation, and Social Change in West Virginia, 1880-1920* (Chapel Hill: University of North Carolina Press, 1998).

Chapter 1: Long-Haul Trucking and the Technopolitics of Industrial Agriculture

In the mid-twentieth century, the United States Department of Agriculture (USDA) encouraged the growth of long-haul trucking as a uniquely flexible form of transportation. At the same time, the USDA worked to harness that flexibility to reshape the politics of farm and food pricing. Particularly in the 1940s and 1950s, when the state's intervention in the agricultural economy came into serious question, agricultural policymakers and economists in the USDA came to view trucking as a key to solving the decades-old "farm problem." This so-called farm problem was simple in theory: agricultural policymakers in the USDA and in Congress wanted to make sure farmers made enough money to keep them on the farm, while keeping food cheap for urban consumers. Achieving this balance proved extremely difficult in practice. Since the end of the Civil War, science and technology had made American farms incredibly productive, reducing the average price of food for consumers. The unfortunate result for farmers was that they often grew more food than they could sell at profitable prices. In the agricultural depression of the 1920s and 1930s, agricultural policymakers sought legislative solutions to the farm problem, culminating in the highly controversial Agricultural Adjustment Acts of 1933 / 1938. The overwhelming productivity of American agriculture after WWII, however, made the New Deal legislative solutions seem obsolete. In the postwar period, as farmers and Republicans attacked statist economic planning while consumers fretted about the rising cost of living, agricultural policymakers sought to find new, less controversial ways to solve the farm problem. Depression-era agricultural policymakers had centered on ways to limit production, but post-WWII agricultural policymakers sought primarily to rationalize the consumption of agricultural products, essentially masking the statism of New Deal policies in the guise of more subtle exercises of state intervention in the agricultural economy. Technologies for making food distribution cheaper and more "flexible" were the key focus, and trucking was at the center of this technological fix that converted the farm problem into an industrial problem.

Trucking and Agriculture before World War II

In the mid- to late-nineteenth century, railroads opened up the prairies and plains of the west for white settlement and intensive commercial agriculture on a grand scale.¹ Any farmer who wished to sow wheat on the Plains, grow fruit or vegetables in California, or raise cattle in Texas was forced to depend on the railroads to get his commodities to distant urban markets. This dependence on large-scale technological systems seemed directly at odds with the agrarian ideology of farmers as independent republican producers, causing repeated outcries from farmers and their representatives in Congress that the "octopus" railroads abused their monopoly power to overcharge for transporting agricultural products.² Though the farmers' ire helped contribute to the formation of the Interstate Commerce Commission to regulate the railroads, the most effective long-term solution to high transportation rates began in the 1920s, when the rails first faced significant competition from gasoline-powered trucks traveling on improved rural roads. From that decade to the late 1940s, agricultural experts in the USDA worked with leaders of farm organizations and farm state representatives in Congress to encourage the growth of the trucking industry as a means of driving down railroad freight rates.

The USDA's Bureau of Public Roads, from its inception in 1918 until the late 1940s, coordinated and encouraged the construction of an extensive network of paved rural highways to serve farm interests. In the late nineteenth and early twentieth centuries, the first proponents of good rural roads were not farmers, but urban bicyclists seeking mud-free excursions into the countryside along with, ironically, railroad executives seeking smoother farm-to-market roads to boost the volume of agricultural goods brought to railheads.³ Until the later 1910s, rural road-

¹ On early railroad development, see George Taylor, *The Transportation Revolution, 1815-1860* (New York: Rinehart, 1951); Colleen A. Dunlavy, *Politics and Industrialization: Early Railroads in the United States and Prussia* (Princeton: Princeton University Press, 1994). On railroads and agriculture, see William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991); Paul W. Gates, *The Illinois Central Railroad and Its Colonization Work* (Cambridge: Harvard University Press, 1934).

² George H. Miller, *Railroads and the Granger Laws* (Madison: University of Wisconsin Press, 1971); Fred A. Shannon, *The Farmer's Last Frontier: Agriculture, 1860-1897* (New York: Farrar and Rhinehart, 1945); Frank Norris, *The Octopus: A Story of California* (New York: Doubleday, 1901).

³ Michael L. Berger, *The Devil Wagon in God's Country: The Automobile and Social Change in Rural America, 1893-1929* (Hamden, CT: Archon Books, 1979), 13-35; Stephen Goddard, *Getting There: The Epic Struggle between Road*

building remained the province of counties, who relied on farmers to voluntarily maintain the roads abutting their property in lieu of taxation. Farmers resisted construction of stone and macadam roads, seeing them as expensive and benefiting primarily "eastern bicycle fellers or one-hoss lawyers with patent leather boots" (as declared in 1893 at an Iowa farmer's convention), or the "devil wagons" of city slickers who frightened horses as they sped through the countryside and drank from farmer's wells without permission.⁴ But farmers' resistance to paved roads evaporated in the late 1910s and 1920s after Henry Ford's low-cost Model T offered farmers a machine that could be used not only to haul farm products to the railhead, but could also take the kids to town for a moving picture while the parents bought supplies, as well as provide an all-purpose engine for operating washing machines and hay elevators. In the 1920s, when a farm woman was asked by a rural sociologist why her family had purchased a Ford instead of indoor plumbing, she replied: "You can't go to town in a bathtub!"⁵

In response to farmers' increasing demand for paved roads, the USDA's Bureau of Public Roads worked with state governments to get farmers "out of the mud" after World War I. Congress passed the Federal-Aid Road Act in 1916, providing \$75 million of federal funds to encourage states to build paved rural roads. The task of coordinating the construction of a nationwide network of rural highways fell to the Bureau of Public Roads, headed by "Chief" Thomas H. MacDonald, who required states to build those roads according to exacting engineering standards. After 1919, the states also relied heavily on gasoline taxes to fund this construction, along with federal matching monies that came with the passage of the 1921 Federal-Aid Road Act, which mandated that forty percent of the federal funds be used to construct farm-to-market roads. Rural roadbuilding expanded dramatically in the 1920s under

and Rail in the American Century (Chicago: University of Chicago Press, 1994), 43-64. The bicycle craze of the 1880s and 1890s was at least partially a result of the increased use of the "safety" bicycle, which had two equally sized wheels rather than the giant front wheel of the "ordinary" bicycle, making it easier to control. See Wiebe E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge, MA: MIT Press, 1995), 19-100.

⁴ Hal S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930* (Chapel Hill: University of North Carolina Press, 1997), 19-42; quote on 30.

⁵ Joseph Interrante, "You Can't Go to Town in a Bathtub: Automobile Movement and the Reorganization of Rural American Space, 1900-1930," *Radical History Review* 21 (1979): 151-168, quote on 151; Ronald Kline and Trevor Pinch, "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States," *Technology and Culture* 37 (Oct 1996): 763-95; Berger, *Devil Wagon*.

this arrangement; between 1921 and 1930, state rural highway systems increased from 203,000 miles to 324,000 miles.⁶

Even as rural roads improved, engineers and manufacturers worked to convert the truck from an urban delivery vehicle based on the horse-and-wagon into a rural road machine. In the 1910s, few trucks were capable of moving outside of cities, not only because rural roads were inadequate, but because early trucks were designed and built to operate in cities, delivering goods such as coal, ice, milk, and mail.⁷ In 1919, the U.S. Army Transport Corps sponsored a transcontinental convoy of trucks, hoping to demonstrate the possibilities of long-haul trucking in the countryside. The trip took two months, however, demonstrating the continued superiority of railroads for long-distance freight shipment.⁸ The commercialization of the pneumatic balloon tire in 1923, however, helped change that. Pneumatic balloon tires allowed manufacturers to build larger trucks that could travel at high speeds with less vibration than the solid rubber tires they replaced, causing less damage to truck bodies and roadbeds.⁹ Roy Fruehauf's 1914 decision to turn his Detroit wagon-building shop into a factory for producing custom-designed truck trailers helped make it possible for trucks of the 1930s to pull three times the weight allowed by straight-truck designs.¹⁰ Large truck manufacturers such as Ford, General Motors, and International Harvester, along with specialized firms such as Mack, White, and Kenworth, increasingly built trucks that resembled neither horse-drawn wagons nor passenger cars. Enclosed cabs, sleeper compartments, hydraulic brakes, "fifth wheels" to allow attachment of separate trailers, and a host of other developments made trucks by the 1930s capable of

⁶ Bruce E. Seely, *Building the American Highway System: Engineers as Policy Makers* (Philadelphia: Temple University Press, 1987), 35-99; U.S. Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970*, Part II (Washington: GPO, 1976), 710.

⁷ Gijs P. A. Mom and David A. Kirsch, "Technologies in Transition: Horses, Electric Trucks, and the Motorization of American Cities, 1900-1925," *Technology and Culture* 42 (Jul 2001): 489-518; Robert F. Karolevitz, *This Was Trucking: A Pictorial History of the First Quarter Century of Commercial Motor Vehicles* (Seattle: Superior Publishing, 1966).

⁸ Karolevitz, *This Was Trucking*, 80-1.

⁹ Louis Rodriguez, "The Development of the Truck: A Constructivist History," (Ph. D. diss., Lehigh University, 1997), 78-80.

¹⁰ Roy Fruehauf, *Over the Road to Progress!: Fruehauf Truck Trailers* (New York: Newcomen Society, 1957) and *Engineered Transportation* (Detroit: Fruehauf Trailer Co., 1930), Warshaw Collection of Business Americana, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Transportation Subject File, Box 2, Folder 21; American Petroleum Institute, "Trailers on the Trail!" film, Feb. 13, 1951, Industry on Parade Film Collection, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Reel 19; Rodriguez, "Development of the Truck," 89-91.

traveling relatively long distances outside of cities.¹¹ Even so, the vast majority of trucks in use in 1930 were used for short hauls, primarily by the Post Office, grocers, general contractors, bakeries, dairies, oil and gasoline stations, and meat-packing firms making urban deliveries. Furthermore, most such trucks were relatively small by post-World War II standards, generally weighing from 1 to 1 1/2 tons.¹²

In the 1920s and 1930s, however, trucks increasingly competed with the railroads for certain loads—particularly perishable agricultural goods such as milk, livestock, poultry, and produce on their way to urban markets. For example, in 1913 only 91,000 hogs arrived by truck at an Indianapolis livestock market; by 1929 over 1,350,000 did so.¹³ In 1932, 80 percent of fruits and vegetables were transported by truck in southwestern Michigan.¹⁴ Railroad managers became increasingly worried that trucks would take over short-haul traffic; in 1933, a group of railroad executives asked the federal government to be allowed to abandon unprofitable short branch lines and replace them with rail-owned truck lines.¹⁵ This fear was well-founded, since truck transportation of highly perishable commodities often "skimmed" the most profitable classes of freight from the railroads. In order to subsidize the very long and expensive hauls that allowed railroads to build up their overall volume, the rails generally charged very high rates on short-haul perishables. Trucks traveling only short distances, however, could easily undercut the rates quoted by the rails, as well as provide faster, point-to-point service.¹⁶

Most worrisome to the railroads was the rise of one particular kind of competitor: the owner-operator trucker. Trucking at the time had relatively low barriers to entry, since all an individual needed to get into the business was a truck, and truck manufacturers readily

¹¹ Earnest R. Sternberg, *A History of Motor Truck Development* (Warrendale, PA: Society of Automotive Engineers, 1981); James Harold Thomas, *The Long Haul: Truckers, Truck Stops, and Trucking* (Memphis: Memphis State University Press, 1979), 73.

¹² William R. Childs, *Trucking and the Public Interest: The Emergence of Federal Regulation, 1914-1940* (Knoxville: University of Tennessee Press, 1985), 20.

¹³ James R. Wiley, *Motor Transportation of Hogs to the Indianapolis Market*, Bulletin 337 (Lafayette, IN: Purdue University Agricultural Experiment Station, 1927), 2.

¹⁴ G. N. Motts, *Motor Truck Marketing of Michigan Fruits and Vegetables*, Michigan Agricultural Experiment Station, Special Bulletin 227 (East Lansing, MI, 1932).

¹⁵ Thomas H. MacDonald, Memorandum for Secretary of Agriculture Henry A. Wallace, "Substitution of Highway Transportation for Unprofitable Branch Line Operations," May 16, 1933, Secretary of Agriculture Records, RG 16, General Correspondence, Entry 17, National Archives II, College Park, MD, Box 1913, Folder 3.

¹⁶ Harold G. Moulton, *The American Transportation Problem* (Washington, DC: Brookings Institution, 1933), 576-7, 610-11.

extended credit to encourage individuals to join up. Approximately 150,000 individuals bought or leased a truck in the 1920s and 1930s and began hauling any loads they could find to try to pay off the loan.¹⁷ Many of these early truckers were farmers who saw the purchase of a truck as a way to set up a small business that would help them escape the agricultural depression of the 1920s and 1930s.¹⁸ Railroad executives and operators of larger established trucking firms took to calling these drivers "gypsies," "wildcatters," or "fly-by-night truckers," since the truckers would take any load to any destination, generally undercutting the rates of larger carriers, and supposedly evading police as they drove their unsafe equipment at high speeds on little sleep.¹⁹ Though the "gypsy" epithet emerged from a clearly biased economic self-interest on the part of larger transportation firms, the railroads were correct in pointing out that owner-operator truckers of the period destabilized the nation's transportation networks. Small trucking firms rose quickly in the 1920s and 1930s due to the low capital costs of entry, but often fell just as rapidly because inexperienced truckers did not know how to calculate the true costs involved in their operations—such as the need to secure a "backhaul" load to cover the expense of returning home, or to take depreciation and interest costs into account when quoting rates.²⁰ In short, trucking by the early 1930s was undeniably chaotic, characterized by intense, cut-throat competition between small and large truckers, as well as between trucking firms and railroads.

A group of powerful interests coalesced in the 1930s to control that chaos by regulating the emerging trucking industry. The upshot of this movement was the 1935 passage of the Motor Carrier Act, one of the few examples of an industry using the increased regulatory power of the federal government during the New Deal to successfully promote its own desire for monopoly.²¹ The original impetus for federal regulation, however, emerged from a pattern set by individual

¹⁷ Childs, *Trucking and the Public Interest*, 35.

¹⁸ See Chapter 5.

¹⁹ Roy B. Thompson, "The Trucking Industry, 1930-1950," Interview Recorded with Corinne L. Gilb, June-August 1958 in Berkeley, California, Industrial Relations Interviews, Bancroft Library, Berkeley, CA, 52; Harry D. Woods, *Woods Highway Truck Library*, New York Times Oral History Program (Glen Rock, NJ: Microfilming Corp. of America, 1975-77).

²⁰ Moulton, *American Transportation Problem*, 521-22, 609-12.

²¹ Ellis W. Hawley, *The New Deal and the Problem of Monopoly: A Study in Economic Ambivalence* (Princeton: Princeton University Press, 1966), 231-4. In the strong anti-monopoly climate of the New Deal, businesses were relatively unsuccessful at using the expanded power of the state to gain monopoly power, but were successful at creating stable labor-management relations and equalizing the impact of social welfare policies on their competitive structures. See Colin Gordon, *New Deals: Business, Labor, and Politics in America, 1920-1935* (Cambridge: Cambridge University Press, 1994).

state regulatory bodies in the 1910s and 1920s, responding to railroads calling on state public utilities commissions to extend to trucks the regulations they placed on trains. The Pennsylvania Public Service Commission introduced the first trucking regulations in 1914, and was soon followed by most of the other states. Though the state regulations were not uniform, most shared some basic characteristics, empowering state commissions to administer licensing requirements and fees for truckers, enforce speed limits and safety laws, and establish maximum sizes and weights of trucks. Most important, the state commissions could prescribe routes that truckers were allowed to travel, administer freight rates to prevent price competition or secret rebates to favored shippers, and limit market entry by requiring a new trucking firm to apply for a "certificate of public convenience and necessity." This last requirement meant that an individual or corporation wishing to start a new trucking business had to prove to the commission that such a business would make a needed contribution to the state's economy and public welfare. In practice, state commissions generally acceded to railroad demands that such certificates not be granted if a railroad already provided adequate service in the geographical area that the new trucker hoped to serve. Regulation at the state level had proved by the 1930s to be an effective tool for limiting competition between trucks and rails in intrastate commerce.²²

The state regulations furthermore defined the contours of the trucking industry in ways that would influence federal efforts at regulation in the 1930s. Spurred by a series of Supreme Court decisions in the 1920s and 1930s (particularly *Sproles v. Binford* in 1932), state commissions created clear categories of trucking firms that they had the power to regulate. The first type to fall under state regulation was the common carrier—a transportation firm that offered its services to the public at large, and, as established by English common law, was required to take any load from any shipper able and willing to pay for the service. State regulation of interstate common carriers in the United States had been applied to railroads since the 1877 *Munn v. Illinois* decision of the Supreme Court, which granted states the right to regulate businesses engaged in interstate commerce in the "public interest." With railroad

²² Donald V. Harper, *Economic Regulation of the Motor Trucking Industry by the States* (Urbana: University of Illinois Press, 1950), 26-7, 32-4; Childs, *Trucking and the Public Interest*, 47-64.

regulation as precedent, the later application of rate and route regulations to common carrier trucking firms was a relatively straightforward process. State authority over another kind of trucking firm proved more complicated, however. This second category, called "contract carriers," involved truckers who offered transportation services only to certain shippers. For example, a trucking firm might specialize in hauling steel beams that required only flatbed trailers, while another trucking company would invest in covered vans to haul only dry groceries, while still another might specialize in carrying refrigerated foods such as meat or fruit. Such contract carriers did not follow a business pattern at all like that of railroads, forcing state regulatory bodies to come up with new justifications for applying the same rules applied to common carriers. The unclear status of contract carriers provided multiple opportunities for judicial contests of the states' police powers, an issue that was finally settled in the *Sproles* case, which declared that states could regulate both common and contract trucking firms, considering both to be "for-hire" forms of transportation, even when their vehicles crossed state lines. A third group of truckers, however, did not and could not fall under the regulatory umbrella of the states, and that was "private carriers," or trucking fleets operated by companies that carried only their own goods and not those of other businesses. In the 1920s and '30s, large private fleets were maintained by the Post Office, bakers, milk dealers, and oil companies, among others, but the largest single group of private owners of trucks was farmers. By 1935, every state except Delaware had statutes providing for regulation of for-hire truckers, though no state regulated private trucking fleets or the trucks of farmers except in relation to safety.²³

Even as the states tightened their grip on trucking, a number of interest groups formulated strategies to institute regulation on the federal level. The two most important groups were large common carrier trucking firms and the railroads, both of which unabashedly promoted federal regulation as a means of reining in rampant competition from smaller trucking firms. A key figure promoting the case of the large trucking firms was Jack Keeshin, a Chicago trucker who transformed his Keeshin Southwest Motor Company from a one-truck operation hauling Fig Newtons from Chicago to South Bend in 1917 into one of the nation's

²³ Childs, *Trucking and the Public Interest*, 65-82; Senate Committee on Interstate Commerce, *To Amend the Interstate Commerce Act, Part I: Motor Carrier Act of 1935, Hearings*, 74th Cong., 1st sess., Feb. 25-28, Mar. 1, 2, 4-6, 1935, p. 84

largest trucking companies by 1932, with a fleet of 250 machines serving giant shippers such as the Atlantic and Pacific Tea Company. In November of the latter year he and two other commercial fleet owners created the American Highway Freight Association, intending to lobby Congress to enact federal legislation modeled after the state codes to clamp down on "gypsy" truckers. "It was a 'dog-eat-dog' business," Keeshin later remembered, "and would so continue unless [federal] regulations were introduced."²⁴ Keeshin's desire for federal regulation was not at first shared by other large truckers, however, who preferred to use self-regulation to limit competition in the industry. The opportunity to self-regulate came with the passage of the National Industrial Recovery Act in June 1933, which established the National Recovery Administration (NRA) as a mechanism for industry trade groups to write "codes of fair competition."²⁵ Although President Franklin Roosevelt and liberal Democrats such as Robert Wagner intended the NRA to serve labor interests as much as business interests, in practice the codes that emerged from the experiment served primarily to provide highly competitive industries a chance to cartelize by creating price-fixing arrangements.

This was exactly the intent behind the formation of the American Trucking Associations, Inc. Under the leadership of Ted V. Rogers, a contract trucking firm owner who preferred self-regulation to government intervention, the American Trucking Associations absorbed Keeshin's pro-regulation group in September 1933 in order to present a unified voice to the NRA negotiator assigned to the trucking industry.²⁶ Drafting the NRA trucking code proved extremely difficult, as the interests of common and contract carriers often collided; some contract carriers were convinced that the larger common carriers intended to use the code to drive them as well as the "fly-by-nighters" out of business. Furthermore, the NRA negotiator insisted on using the code to equalize drivers' working conditions and wage rates around the country and across the industry, a provision that the trucking firms bitterly resisted and only ruefully accepted—without instituting an 8-hour day, however—in order to gain the benefits of cartelization.²⁷ The

²⁴ John Lewis Keeshin, *No Fears, Hidden Tears: A Memoir of Four Score Years* (Chicago: Castle-Pierce Press, 1983), 19-20, 32-3.

²⁵ Hawley, *New Deal and the Problem of Monopoly*, 19-71.

²⁶ The word "Associations" (plural) was used because it was a national collection of dozens of state- and regional-level trucking associations that had sprung up in the 1920s to negotiate with state regulatory bodies. Childs, *Trucking and the Public Interest*, 105-6.

²⁷ Thompson, "The Trucking Industry," 100-176; Childs, *Trucking and the Public Interest*, 101-9.

code that finally emerged from the negotiations was signed by President Roosevelt in February 1934, and at first seemed successful as a means of limiting chaos in the industry. An Industrial Relations Board was established to help unionized drivers improve working conditions, and guidelines were established to prevent trucking firms from engaging in destructive price competition. But as with many of the NRA codes, the difficulties of maintaining self-regulation in a highly competitive industry quickly became apparent. Although 300,000 truckers signed on to the code, at least 75,000 refused to abide by its rules. Furthermore, even many who did sign the code simply did not comply, particularly with its labor provisions; once the Blue Eagle was pasted in the truck window, the firm would cut wages or prices anyway. The NRA could offer little help in the way of enforcement in such a decentralized, small-firm industry, where every individual trucker had an incentive to try to shirk the code's provisions to gain a competitive edge on those who followed the rules. By the fall of 1934, the trucking code was useless for minimizing chaotic conditions in the trucking industry, a fact that was only affirmed when the NRA's enabling legislation was declared unconstitutional by the Supreme Court in the 1935 *Schechter v. U.S.* case.²⁸ The failure of the NRA code would push most of the members of the ATA towards Jack Keeshin's view that only through strong federal regulation could chaos be controlled.

Even before the NRA code was put in place, the nation's largest railroads pushed for regulation of the trucking industry. Railroad revenues dropped rapidly at the onset of the Great Depression, declining by half between 1929 and 1932, a situation that seemed at least partially due to competition from owner-operator truckers.²⁹ In 1932 the railroads asked Republican Senator James Couzens of Michigan to introduce a bill that would have placed the trucking industry under the regulatory oversight of the Interstate Commerce Commission (ICC). The ICC was created by Congress in 1887 to regulate the railroad industry, in response to protests from shippers—particularly Midwestern and Western farmers—that the railroads abused their monopoly over the nation's transportation to charge whatever the traffic would bear, even as they provided secret rebates to favored Eastern industrialists. Intending to tame that monopoly

²⁸ Childs, *Trucking and the Public Interest*, 112-4; Hawley, *New Deal and the Problem of Monopoly*, 127-9, 232-3.

²⁹ Ari Hoogenboom and Olive Hoogenboom, *A History of the ICC: From Panacea to Palliative* (New York: W. W. Norton, 1976), 119-20.

power, Congress granted the ICC the power to police the rates charged by rails and forestall price-fixing practices. Railroad executives, however, consistently chafed under federal regulation, which they felt limited their profitability, and continuously found ways to circumvent the ICC's regulation, even after Congress strengthened the "teeth" of the Commission in 1903, 1906, and again in 1910. In practice, then, the ICC's bureaucrats consistently found themselves forced to forge cooperative alliances with railroad executives, resulting in an often unclear distinction between the interests of the regulator and the regulated.³⁰

By the time the railroads began agitating for regulation of the trucking industry to limit competition, the ICC lent a somewhat sympathetic ear. In a 1932 report, the ICC declared that trucking created chaotic competition in transportation, potentially forcing the railroads to radically alter their rate structures upward in order to compensate for traffic lost to price-cutting truckers.³¹ In testimony before Congress on the Couzens bill in 1932, then, the railroads pled for legislation to shield them from trucking competition. Although the Couzens bill engendered four weeks of Congressional hearings that produced over 700 pages of transcribed text, the bill did not get reported out of committee. The percentage of trucks involved in interstate commerce at the time was so small—less than two percent—that Congress saw no public need for federal regulation in 1932, especially when that legislation was so patently written to serve the railroads' interests.³² Furthermore, the ICC, which the railroads had assumed would side with them in

³⁰ Historians and political scientists have engaged in lengthy debates about whether the ICC was "captured" by railroad interests. The strongest argument for the "capture" theory comes in Gabriel Kolko, *Railroads and Regulation, 1877-1916* (Princeton: Princeton University Press, 1965), which argues that the railroads actually *wanted* to be regulated to gain monopoly powers. Kolko's thesis has been most strongly disputed by Albro Martin, who sees the ICC as a corrupt, railroad-hating regulatory body that did its best to strangle the railroads to death; *Enterprise Denied* (New York: Columbia University Press, 1971). More tempered views have navigated between these two poles, arguing that while the railroads learned to accept certain regulatory functions that limited competition and stabilized freight rates, they only accepted regulation as a last resort in the face of widespread public dissatisfaction with the laissez-faire "octopus." Furthermore, although the ICC took a pragmatic approach by maintaining close ties with railroad managers, it also quite often acted in direct opposition to the industry's interests. See Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917* (Chicago: University of Chicago Press, 1999), 179-216; Ari Hoogenboom and Olive Hoogenboom, *A History of the ICC: From Panacea to Palliative* (New York: W. W. Norton, 1976); Stephen Skowronek, *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920* (Cambridge: Cambridge University Press, 1982).; Steven W. Usselman, *Regulating Railroad Innovation: Business, Technology, and Politics in America, 1840-1920* (New York: Cambridge University Press, 2002). If anything, over time the ICC was "captured" by large common carrier trucking firms to a greater extent than by railroaders; see Lawrence S. Rothenberg, *Regulation, Organizations, and Politics: Motor Freight Policy at the Interstate Commerce Commission* (Ann Arbor: University of Michigan Press, 1994), esp. 121-62.

³¹ Interstate Commerce Commission, *Coordination of Motor Transportation*, 72d Cong., 1st Sess., 1932, S. Doc. 43.

³² Senate Committee on Interstate Commerce, *Regulation of Motor Carrier Transportation, Part 1, Hearings*, 72d Cong., 1st sess., Feb. 1-6, 8, 1932, esp. p. 68; *ibid.*, *Part 2, Hearings*, Mar. 3, 7-10, 14, 15, esp. p. 209; *ibid.*, *Part 3, Hearings*, Mar. 16, 17, 22-26; *ibid.*, *Part 4, Hearings*, Mar. 28-31; Lawrence S. Rothenberg, *Regulation*,

calling for regulation of trucks, proved ambivalent—until Franklin Roosevelt appointed Joseph B. Eastman as Federal Coordinator of Transportation in 1933.

Joseph Eastman pulled together the coalition of interest groups that convinced Congress to pass the Motor Carrier Act of 1935. A member of the ICC since 1919, Eastman became the Federal Coordinator of Transportation in June 1933. This post was created by the passage of the Emergency Railroad Transportation Act, signed at the same time as the National Industrial Recovery Act, which Roosevelt intended to help pull the railroads out of near-bankruptcy. Eastman was a Progressive public servant in the tradition of Louis D. Brandeis, having worked with Brandeis on New England railroad cases in the 1910s. Above all, Eastman believed in using the regulatory power of the state to create *efficiency* in transportation. In fact, Eastman had socialist leanings which led him to believe that the government should own and operate the nation's transportation networks; short of that, he firmly believed in deep regulation of transportation to minimize competition.³³

Once he became Federal Coordinator, Eastman worked to bring together the interests of the railroads and the large trucking firms (represented by the ATA, whose member Jack Keeshin was a close friend of Eastman), proposing legislation to Congress in 1934 to regulate the trucking industry in the interest of transportation stability.³⁴ Achieving efficiency in transportation, he believed, could not "be attained or even approached without public regulation [of the trucking industry]."³⁵ This was because, as he told the Senate Committee on Interstate Commerce in 1935, the rapid rise of the trucking industry created "unnecessary and wasteful competition" between trucks and railroads, leading to "an oversupply of transportation facilities" that harmed the interests of railroad investors, shippers, and truck drivers alike.³⁶ Eastman was fully aware that federal regulation of trucking would lead to the rise of large firms who would use the ICC's regulatory mechanisms to raise their freight rates without fear of anti-

Organizations, and Politics: Motor Freight Policy at the Interstate Commerce Commission (Ann Arbor: University of Michigan Press, 1994), 46.

³³ Childs, *Trucking and the Public Interest*, 119-24. On Brandeis, see Thomas K. McCraw, *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn* (Cambridge, MA: Harvard University Press, 1984), 80-142.

³⁴ Federal Coordinator of Transportation, *Report of the Federal Coordinator of Transportation on Regulation of Transportation Agencies*, 73d Cong., 2d sess., Mar. 10, 1934, S. Doc. 152.

³⁵ Senate Committee on Interstate Commerce, *Amend the Interstate Commerce Act*, 51.

³⁶ *Ibid.*, 50.

trust prosecution, but convinced Congress that this granting of monopoly powers would serve the public interest. Large-scale business would bring efficiency, argued Eastman, pointing to the example of Ford Motor Company as a large firm that had used vertical integration to drive down the cost of producing goods. "Gradually there will be a development of larger operations," admitted Eastman, but he believed those large trucking companies would "be more economical when well organized."³⁷

The Motor Carrier Act became law in the summer of 1935, authorizing the ICC to control rampant competition in the trucking industry. The mechanisms for controlling chaos were based on those developed by state regulations in the previous decade. In order to engage in interstate commerce, a trucking firm had to apply to the ICC for a certificate of public convenience and necessity. To get this certificate, a firm had to prove that the geographical routes to be served were not already adequately served by existing carriers—whether railroads or other truckers—as well as offer evidence that the firm was financially stable (primarily by carrying insurance). Furthermore, the firm would have to periodically publish its freight rates, rates that were closely watched by the ICC to prevent price-cutting. Although the ICC "grandfathered" in all existing motor carriers in the first year after the passage of the Motor Carrier Act (MCA), over the next 45 years the effect of these regulations was to create significant barriers to entry in the industry. That is, a new common carrier or contract trucking firm needed more than just a truck and trailer to start in business; it needed to gain operating authority as well, authority which the ICC granted only after lengthy and expensive proceedings meant to discourage competition.³⁸

But even as large trucking companies, railroads, and the ICC gained the power to control chaos in trucking, a very significant exception was made for agricultural trucking. A clause in the MCA that came to be known as the "agricultural exemption" allowed truckers hauling certain farm products to do so without first gaining a certificate of authority from the ICC. From the

³⁷ Ibid., 61-2, quote on 66.

³⁸ John Richard Felton and Dale G. Anderson, eds., *Regulation and Deregulation of the Motor Carrier Industry* (Ames: Iowa State University Press, 1989), 16-25. Occasionally the ICC's policies were contested as violations of anti-trust, but the Supreme Court consistently upheld the Commission's authority to permit economic concentration in the industry if it did so in "the public interest," under the guidelines set forth by Congress in the original and amended Interstate Commerce Act. See *McClellan Trucking Co. v. United States*, 321 U.S. 67 (1944). Anti-trust became a moot issue in 1948 with the passage of the Reed-Bullwinkle Act, which exempted the ICC's rate-making bureaus from anti-trust provisions. *Statutes at Large* 62 (1948): 472.

very beginning of the drive to regulate trucking, farm groups such as the National Grange applied pressure to Congress to allow farmers and farm cooperatives to truck their products to market without ICC oversight. The anti-regulatory movement first emerged during the NRA code hearings. The National Cooperative Milk Producers Association, for instance, declared that the NRA trucking code would allow trucking firms "to increase the transportation charges on farm products moving from the farm into the channels of commerce and trade [by seeking] government recognition and assistance in the establishment of a gigantic trucking trust."³⁹ Every major farm group in the nation flooded farm bloc Congressmen and Secretary of Agriculture Henry A. Wallace with "numerous telegrams" demanding the NRA code be stopped.⁴⁰ Wallace, sympathetic to the organizations' pleas, asked his friend Donald Murphy, editor of the influential farm journal *Wallace's Farmer and Iowa Homestead*, to "sound a warning, privately or publicly, as you see fit, on the perils of the trucking code that is now before General Johnston."⁴¹ Wallace further coordinated a strategy within the USDA to present Congress with evidence that trucking had "mitigated the effect of the depression on farmers" by allowing them to bypass middlemen, such as country elevators and produce commission merchants, whose services had been necessary in a railroad-based agricultural economy but unnecessarily cut into farmers' incomes in a highway-based economy.⁴²

Opposition to regulation of agricultural trucking continued during the Congressional hearings on the legislation that became the Motor Carrier Act. The National Grange, in particular, fought Joseph Eastman's efforts to "destroy the existing competition in transportation and to perpetuate the transportation monopoly which will be dominated by the railroads."⁴³ Testifying before the Senate in 1935, the national representative of the Grange noted that federal trucking regulation "would result in serious handicaps to the farmer, the

³⁹ Charles W. Holman (Secretary, National Cooperative Milk Producers Federation), "Statement ... with Relation to the Proposed Code of Fair Competition for the Trucking Industry," Dec. 4, 1933, Secretary of Agriculture Records, RG 16, General Correspondence, Entry 17, National Archives II, College Park, MD (hereafter RG 16, Entry 17), Box 1913, Folder 9. See also George Haas (Acting Governor, Farm Credit Administration) to Hugh S. Johnson, Dec. 12, 1933, *ibid.*

⁴⁰ Henry A. Wallace to Rep. John McDuffie, Nov. 1, 1933, RG 16, Entry 17, Box 1913, Folder 9.

⁴¹ Paul H. Appleby to Donald R. Murphy, Nov. 1, 1933, RG 16, Entry 17, Box 1913, Folder 9.

⁴² Henry A. Wallace, Memorandum for George N. Peek, "Proposed Code on Fair Competition for the Trucking Industry," Nov. 2, 1933, RG 16, Entry 17, Box 1913, Folder 9.

⁴³ Fred Brenckman (Washington Representative, The National Grange) to Henry A. Wallace, "Federal Regulation of Motor Trucks," Mar. 28, 1934, RG 16, Entry 17, Box 2032, Folder 19.

stockmen, and the horticulturists" by allowing trucking companies to peg their rates to those of the railroads, creating an upward pressure on all freight rates for farm goods.⁴⁴ Farm opposition to Eastman's bill was especially strong during testimony in the House; organizations from the Grange to the American National Livestock Association declared the legislation an effort by railroads to "consolidate in one vast system all the transportation facilities of the country [that] would amount to the same as creating one giant monopoly."⁴⁵ Eastman, for his part, felt the farm organizations misunderstood the intent of the legislation, pointing out to Henry Wallace that farmers who hauled their own products to market, as well as farmer cooperatives who ran their own fleets of trucks, would not fall under the ambit of the ICC, since they were "private carriers ... not subject to the proposed regulation."⁴⁶ Attempting to assuage the farm interests, Eastman amended his original proposal to specifically exempt truckers hauling "unprocessed agricultural commodities" from the ICC's regulations; as Eastman saw it, such phrasing would allow any farmer or farm cooperative to haul products such as milk or livestock to a dairy or meatpacker (from farm to "first market") without need for ICC authority. But Congressmen from farm states were convinced that this exemption was not enough; as Walter Pierce, Democratic Representative for Oregon, noted during debates on the Motor Carrier Act, "many members will lose their seats on this very issue."⁴⁷ Bowing to the pressure, Congress went Eastman one step further and wrote into the MCA a clause exempting all "agricultural commodities (not including manufactured products thereof)."⁴⁸

With this phrasing, not only were farmers and farm cooperatives exempt from ICC regulation, but so was *any* trucker who hauled agricultural goods that were not "manufactured." Congress declined to state exactly what would count as an unmanufactured commodity, but during the debates on the bill it became clear that the phrasing was meant to include such products as pasteurized milk and ginned cotton which had undergone some processing—a firm rebuke of Eastman's efforts to limit exempt agricultural hauling only to private farm-to-first-

⁴⁴ Senate Committee on Interstate Commerce, *Amend the Interstate Commerce Act*, 504, 508.

⁴⁵ House Committee on Interstate and Foreign Commerce, *Regulation of Interstate Motor Carriers, Hearings*, 74th Cong., 1st sess., Feb. 19-22, 26-28, Mar. 1, 4, 5, 1935, 290-301, 327-39, 395-402, quote on 291.

⁴⁶ Joseph B. Eastman to Henry A. Wallace, "Effect of the Proposed Motor Carrier Act on Farm Trucking," Mar. 16, 1934, RG 16, Entry 17, Box 2032, Folder 19.

⁴⁷ *Congressional Record*, 74th Cong., 1st sess., Jul. 31, 1935, vol. 79, pt. 11, p. 12217.

⁴⁸ *Ibid.*, 12221.

market transportation.⁴⁹ Without this amendment, the MCA would never have become law under a Congress beholden to agricultural interests.⁵⁰ Perhaps more importantly, the exemption created an opening in the ICC's regulatory structure that, as we shall see below, would allow the USDA after World War II to transform the chaos of unregulated trucking into "flexibility" in the service of its efforts to solve the farm problem through technopolitical means.

In the first decade of federal trucking regulation, the agricultural exemption played only a minor role in a much larger effort by the USDA to contest the economic power of the railroads. Secretary of Agriculture Henry A. Wallace, in particular, clung to an agrarian ideology that viewed the nation's railroad executives as profiteers determined to swindle the American farmer.⁵¹ Throughout his tenure as Secretary, from 1932 to 1940, Wallace repeatedly contested railroads' efforts to raise their rates for shipping agricultural products. In 1934 Wallace testified before the ICC during hearings to consider whether the rails should be allowed to raise freight rates to improve their financial condition. Wallace opposed the increase, arguing that it would raise the cost of food for consumers while placing a disproportionately high burden on farmers. Railroads would do better for themselves and for the nation, Wallace insisted, if they would *lower* their rates during the Depression to capture higher volumes of freight.⁵² The ICC disagreed in this instance, granting the increase, but over the next few years Wallace would continue his efforts. In 1937, farm organizations asked Wallace to contest an attempt by the railroads to gain a 15 percent rate increase from the ICC; Wallace complied, making the same argument he had made three years earlier, but this time won the argument. Pleased with the

⁴⁹ Ibid., 12197-12227, esp. 12219-21. See also Celia Sperling, *The Agricultural Exemption in Interstate Trucking: A Legislative and Judicial History* (Washington: USDA, Agricultural Marketing Service, 1957).

⁵⁰ On the reasons for agricultural influence over Congress in this period, see John Mark Hansen, *Gaining Access: Congress and the Farm Lobby, 1919-1981* (Chicago: University of Chicago Press, 1991), and for a contrasting view, Richard F. Bensel, *Sectionalism and American Political Development, 1880-1980* (Madison: University of Wisconsin Press, 1984).

⁵¹ Wallace's antipathy to the railroads became public knowledge in 1943, when as Vice-President considering a 1944 bid for the Presidency, he declared that the ICC was a puppet of the railroads. Wallace called for a revision of national transportation policy to allow trucking to grow without suppression from the agency, a statement widely interpreted as an indirect attack on the Roosevelt administration for having become too accommodating towards big business interests. Henry A. Wallace, "Transportation," speech delivered Oct. 20, 1943, Dallas, TX, in Henry A. Wallace Papers, University of Iowa Library, Special Collections, Iowa City, IA; "Wallace Demands Laws to Break up Rail

'Monopolies'," *New York Times* (hereafter NYT), Oct. 21, 1943, 1, 21, and "Wallace Repeats Railroad Charges," *ibid.*, Oct. 23, 1943, 24 and Raymond Moley, "A New 'Peerless Leader'," *Washington Evening Star*, Oct. 26, 1943, all in Pennsylvania Railroad Company Records, Hagley Museum and Library Archives, Wilmington, DE, Box 282, Folder 4. ⁵² Henry A. Wallace, "High Freight Rates as a Retarding Factor in Agricultural and Industrial Recovery," Statement at Hearings before the Interstate Commerce Commission on Increase in Freight Rates and Charges, Docket Ex Parte 115, Dec. 7, 1934, RG 16, Entry 17, Box 2001, Folder 7.

results, Wallace asked Congress to give him permanent authority to represent farmers' interests during ICC hearings on freight rate increases. As a result, Congress wrote Section 201 of the Agricultural Adjustment Act of 1938, conferring on the Secretary of Agriculture broad powers to file complaints with the ICC "against rates and charges on farm products."⁵³ Little noticed at the time, this aspect of the new agricultural program set, in the words of a *Washington Post* editorialist, a "most unfortunate precedent," allowing "a member of the Cabinet ... to press the demands of a special group of citizens before an independent agency of the Government."⁵⁴ For Wallace, however, the power and economic expertise of the USDA was required to confront the hosts of lawyers, accountants, economists, and other "professional witnesses" employed by the railroads to convince the ICC to increase their rates.⁵⁵ To that end, Wallace created a Transportation Rates and Services Division within the USDA, appointing transportation economist Charles B. Bowling as its head. By 1945, Bowling claimed to have saved American farmers over one billion dollars in shipping costs by fighting railroad efforts to raise rates on agricultural goods.⁵⁶

Prior to World War II, USDA involvement in transportation policy sowed the seeds for the "flexibility" that would become central to postwar efforts to use trucking to "solve" the farm problem. Rural roadbuilding, the insertion of an agricultural "exemption" clause in the 1935 Motor Carrier Act, and the 1938 Congressional charge to the Secretary of Agriculture to contest railroad rate increases were all based in an agrarian politics rooted in the anti-monopoly movements of the late 19th century. Until the late 1940s, agricultural influence on transportation policy framed the issue in terms of using the power of the state to allow farmers to counter-organize as an economic interest group, fighting the "money powers" that ran the railroads. In this formulation, trucking was simply a way for farmers to reduce the railroads' monopoly power over agricultural shipping. After the war, however, USDA transportation

⁵³ W. G. West (Secretary, Kansas Livestock Association) to Henry A. Wallace, Dec. 22, 1937, RG 16, Entry 17, Box 2789, Folder 8; *Statutes at Large* 52 (1938): 36-7

⁵⁴ "Agent for the Farmer," *Washington Post*, Jul. 5, 1938, 6

⁵⁵ Henry A. Wallace to Sen. J. P. Pope, Aug. 23, 1938, RG 16, Entry 17, Box 2839, Folder 1.

⁵⁶ USDA Newsletter, "Bowling Saves Millions," Nov. 26, 1945, 4, Agricultural Marketing Service Records, RG 136, Transportation and Facilities Research Division Subject Files, Entry 42, National Archives II, College Park, MD (hereafter RG 136, Entry 42), Box 6, Folder 8; Production and Marketing Administration, *Transportation Activities: Semi-Annual Report of the Transportation Rates and Services Division*, Jul. 1947, 5, 52.

experts sought a new direction—to encourage the growth of trucking as a means of converting the farm problem into an industrial problem. Trucking would no longer be simply a competitor to railroads, but central to the creation of a marketing machine bent on the minimization of labor costs in food distribution and the maximization of the power of food processors and supermarkets to reshape the geography of agricultural production and politics of food pricing.

Turning the Farm Problem into an Industrial Problem

To understand why USDA agricultural experts sought a technological fix to the farm problem in the late 1940s and early 1950s, we have to understand just how tricky the problem had become by that time. The problem of maintaining a balance between farmers' incomes and consumer food expenses first appeared as a politically salient issue during the Populist movements of the late nineteenth century. Southern farmers reacting to the credit squeeze of the crop lien system, along with Northern Plains farmers struggling with the economic distress of droughts and globalizing wheat markets, called on the federal government to protect farmers from the nation's "money interests" (i.e., landlords, banks, and especially railroads). Although the Populists failed to elect their presidential candidates in the 1892 and 1896 national elections, they were successful in putting the farm problem on the nation's political agenda.⁵⁷ Progressive reformers of the early twentieth century adapted many of the Populists' ideas as new legislation and policies, from the strengthening of the Interstate Commerce Commission to the establishment of rural producers' cooperatives to improve the leverage of farmers in agricultural markets.⁵⁸ These policy efforts had some success in mitigating the farm problem, but even more important were the rising prices for farm products (particularly wheat) that came in the 1910s

⁵⁷ Lawrence Goodwyn, *The Populist Moment: A Short History of the Agrarian Revolt in America* (Oxford: Oxford University Press, 1978); Sanders, *Roots of Reform*; Richard Hofstadter, *The Age of Reform: From Bryan to F. D. R.* (New York: Vintage Books, 1955); Robert C. McMath, Jr., *American Populism: A Social History, 1877-1898* (New York: Hill and Wang, 1993).

⁵⁸ Daniel T. Rodgers, *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge, MA: Harvard University Press, 1998), 318-66; Hal S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930* (Chapel Hill: University of North Carolina Press, 1997), 81-151.

with expanding global demand. The period leading up to and through World War I witnessed a "golden age of agriculture" that significantly defused political agitation by farmers.⁵⁹

The farm problem returned to the nation's political consciousness with a vengeance in the 1920s. Huge surpluses created by production for World War I led to a postwar drop in farm prices and a consequent agricultural depression. Congressmen from rural states reacted by forming a "farm bloc" devoted to increasing farmer's incomes, either by limiting agricultural production or by guaranteeing farmers a "parity" price for their crops. Attempts to pass effective legislation like the McNary-Haugen Bill foundered in the 1920s, as farm representatives from different regions of the country could not reach consensus on the proper mechanism for assuring steady farm incomes.⁶⁰ When the Great Depression struck in 1929, however, the farm problem became especially acute, as impoverished and desperate farmers called on the federal government for support. Herbert Hoover's Farm Board attempted to implement the least statist proposals discussed in the McNary-Haugen debates—particularly voluntary marketing controls to shore up farm prices—but with little success. Most farmers continued to act as self-interested individuals, refusing to cooperatively reduce their production to increase prices. The agricultural depression continued.⁶¹

When Franklin Roosevelt came into office, one of his administration's first acts during the famous "First 100 Days" was to put together all of the ideas from the 1920s and Hoover's farm program into the Agricultural Adjustment Act. The legislation, which created the Agricultural Adjustment Administration (AAA), did eventually shore up some farmers' incomes by creating price supports and production controls, but at the price of forcing thousands of small farmers, tenants, and sharecroppers off the land.⁶² As a consequence, the AAA offended both

⁵⁹ David Danbom, *Born in the Country: A History of Rural America* (Baltimore: Johns Hopkins University Press, 1995), 161-7; Theodore Saloutos and John D. Hicks, *Twentieth-Century Populism: Agricultural Discontent in the Middle West, 1900-1939* (Lincoln: University of Nebraska Press, 1951); David A. Lake, "Export, Die, or Subsidize: The International Political Economy of American Agriculture, 1875-1940," *Comparative Studies in Society and History* 31 (Jan. 1989): 91-94.

⁶⁰ James Shideler, *Farm Crisis, 1919-1923* (Berkeley: University of California Press, 1957); Hansen, *Gaining Access*.

⁶¹ David E. Hamilton, *From New Day to New Deal: American Farm Policy from Hoover to Roosevelt, 1928-1933* (Chapel Hill: University of North Carolina Press, 1991); Gilbert C. Fite, *George N. Peek and the Fight for Farm Parity* (Norman: University of Oklahoma Press, 1954).

⁶² Pete Daniel, *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880* (Urbana: University of Illinois Press, 1985); Gilbert C. Fite, *Cotton Fields No More: Southern Agriculture, 1865-1980* (Lexington: University Press of Kentucky, 1984).

conservatives who saw it as an affront to free enterprise, and liberals who saw the program as harmful to the least privileged members of rural society. Furthermore, the goals of the AAA were directly at odds with much of the rest of New Deal legislation, since raising farm prices only served to increase the cost of food for other members of the New Deal coalition, particularly urban industrial laborers. These aspects of the New Deal farm legislation were controversial, but the programs became especially politically unpopular when Secretary of Agriculture Henry A. Wallace ordered six million hogs culled and one-quarter of the Southern cotton crop plowed under to increase market prices in 1933-34. Republican critics of the New Deal ridiculed the Roosevelt administration for destroying livestock and crops when millions of Americans were starving and poorly clothed.⁶³

Underlying all of these political controversies was the simple fact that American farmers produced too much food in the first half of the twentieth century. Even as the political wing of the USDA was administering legislation to support farm prices and limit the amount of acreage farmers could put into production, its scientific and technological bureaus were successfully encouraging farmers to use pesticides, fertilizers, hybrid crops, and tractors to *increase* their production. Secretary Wallace only very reluctantly ordered the culling of hogs in 1933, since his fundamental philosophy regarding American agriculture was one of ever-increasing abundance, not limits to production.⁶⁴ The USDA's technological and scientific efforts from the late 19th century into the 1940s, encouraged by economists such as M. L. Wilson, focused on creating huge, industrial farms where commodities could be produced factory-style.⁶⁵ The AAA made for good headlines and solid political support for the Democrats from large commercial farmers, but the USDA's real efforts to solve the farm problem were, until the post-WWII era, focused primarily on increasing big farmers' production and forcing small, "inefficient" farmers out of the market.⁶⁶

⁶³ Richard S. Kirkendall, *Social Scientists and Farm Politics in the Age of Roosevelt* (Columbia: University of Missouri Press, 1966); John C. Culver and John Hyde, *American Dreamer: The Life and Times of Henry A. Wallace* (New York: W. W. Norton, 2000).

⁶⁴ Culver and Hyde, *American Dreamer*.

⁶⁵ Deborah K. Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003).

⁶⁶ Robert Paarlberg and Don Paarlberg, "Agricultural Policy in the Twentieth Century," *Agricultural History* 72 (Sep 2000): 136-61.

This stance was useful during World War II, when American farmers were called upon to feed the boys overseas. Wars are not won on empty stomachs, and America's highly productive farmers profited from the chance to keep the Allied soldiers in prime fighting condition. The devastation of European and Soviet agricultural fields sent demand for American agricultural products soaring. Assured of high prices for their products, American farmers were able to invest heavily in tractors, fertilizers, hybrid seeds, and other technologies for increasing crop yields—without concern for overproduction.⁶⁷ High demand for American agricultural products pushed prices up, but at the same time, wartime price controls made sure the prices—if not the availability—of food remained reasonable for civilian consumers.⁶⁸ For a time at least, the farm problem was solved, except that farmers had become accustomed to high prices and unrestrained production, while consumers had been mobilized by the state to agitate for government control of food prices.

At war's end it became clear to agricultural policymakers in Congress and the USDA that surpluses and food prices were again going to be a problem.⁶⁹ In 1947 and 1949, the National Planning Association gathered together a group of agricultural economists, farm organization leaders, and labor and consumers' representatives to discuss the future of food politics in postwar America. The results of these meetings, published under the titles *Dare Farmers Risk Abundance?* and *Must We Have Food Surpluses?*, came to the conclusion that farmers would only continue to keep growing more and more food, no matter what Congress tried to do to limit production. The only way to keep farmers from overproducing themselves into poverty, the reports argued, was to allow farm prices to rise. The key to doing this without driving up the cost of living for American consumers was, as the latter report put it, "increased efficiency in

⁶⁷ Robert C. Williams, *Fordson, Farmall, and Poppin' Johnny: A History of the Farm Tractor and Its Impact on America* (Urbana: University of Illinois Press, 1987); Katherine Jellison, *Entitled to Power: Farm Women and Technology, 1919-1963* (Chapel Hill: University of North Carolina Press, 1993).

⁶⁸ Meg Jacobs, "'How About Some Meat?': The Office of Price Administration, Consumption Politics, and State Building from the Bottom Up, 1941-1946," *Journal of American History* 84 (Dec 1997): 910-41; Meg Jacobs, *Pocketbook Politics: Economic Citizenship in Twentieth-Century America* (Princeton: Princeton University Press, 2005).

⁶⁹ Barton Bernstein, "Clash of Interests: The Postwar Battle between the Office of Price Administration and the Department of Agriculture," *Agricultural History* 41 (Jan. 1967): 45-57.

marketing to ... cut costs of distribution."⁷⁰ Whereas the USDA had always focused on rationalizing the *production* of food, now they should also, according to the National Planning Association agricultural experts, use technology to rationalize the *consumption* of food.

These conferences held by the National Planning Association served mainly to bolster a new direction in agricultural policy already being put in place by Congress and the USDA in the mid-1940s. In 1943, economist F. L. Thomsen of the USDA's Bureau of Agricultural Economics (BAE) addressed a national gathering of agricultural policymakers, calling for a new kind of technological solution to the farm problem: "For a century, the leaders of farmer and consumer groups have been shouting from the rostrums ... for a more efficient marketing system. It is now time to do something about it."⁷¹ That "something" turned out to be the Agricultural Research and Marketing Act of 1946 (RMA), which explicitly ordered the USDA's economists and engineers to come up with new technologies for rationalizing the marketing of America's agricultural products. The bill's main sponsor, Representative Clifford R. Hope of Kansas, described the central idea of the legislation to Congress in July of 1946: "The [Research and Marketing Act] is based upon the idea of abundant production and efficient distribution and utilization of food and other farm products."⁷² Efficient food distribution, according to Hope, required technologies that lowered or eliminated the cost of labor, along with technical research into the economics of mass consumption. With the optimism suggested by his surname, Congressman Hope firmly believed that more machines and smarter marketing experts would solve the farm problem that decades worth of political haggling over how to limit production had never solved. Furthermore, that solution would come with the avowed acceptance of an economic philosophy of abundance, rather than scarcity—a dramatic political statement in a country seeking to pull itself out of two decades of depression and war. The RMA offered to

⁷⁰ National Planning Association, *Dare Farmers Risk Abundance?* (Washington: National Planning Association, 1947); National Planning Association, *Must We Have Food Surpluses?* (Washington: National Planning Association, 1949), quote on 18.

⁷¹ F. L. Thomsen, "Postwar Readjustments in Marketing and Distribution," Address before Annual Agricultural Outlook Conference, Washington, DC, Oct. 20, 1943, John D. Black Papers, Wisconsin Historical Society, Madison, WI (hereafter John D. Black Papers), Additional Files, Box 2, Folder 11. See also F. L. Thomsen, "A Critical Examination of Marketing Research," *Journal of Farm Economics* 27 (Nov 1945): 947-62.

⁷² *Congressional Record*, 79th Cong., 2d sess., Jul. 15, 1946, vol. 92, p. 9031.

create a true consensus on agricultural policy, transcending partisan divisions and uniting the interests of food producers and consumers.⁷³

Three main factors led to the development of this new direction in agricultural policy. First, Congress had been taken over by Republicans in 1946 for the first time since the beginning of the Great Depression. Eager to erase the so-called "socialist" aspects of New Deal legislation, Republican politicians from farm states (including Hope) sought to solve the farm problem without the use of the centralized economic planning that lay at the heart of the AAA. As postwar tensions with the Soviet Union increased, price supports and acreage controls were increasingly painted as "socialistic" by opponents of the New Deal. This became especially clear in 1948 and 1949, when Republican Congressmen, the American Farm Bureau Federation, and western beef ranchers spectacularly shot down the efforts of Truman's Secretary of Agriculture, Charles F. Brannan, to replace commodity price supports with direct payments to farmers based on their annual income. Brannan had attempted to make the New Deal's agricultural policies more fair to both small farmers and consumers. For small farmers, Brannan's plan would have guaranteed minimum *incomes* rather than minimum crop prices, with large farmers receiving proportionally less assistance. For consumers, Brannan offered food subsidies and a promise to increase the supply of high-value, high-demand foods such as beef and milk to keep prices low. Brannan effectively proposed to unite urban organized labor and small rural producers under the banner of the Democratic Party, but Republican opponents of the plan smeared the plan as expensive and "communistic" in its unabashed effort to redistribute farm wealth through centralized economic planning.⁷⁴ Second, agricultural economists, like other economists, had

⁷³ *Statutes at Large* 60, 1082 (1946); House Committee on Agriculture, *Agricultural Research, Hearings*, 79th Cong., 2d sess., Jun. 13-26, 1946; House Committee on Agriculture, *Agricultural Research*, 79th Cong., 2d sess., Jul. 8, 1946, H. Rept. 2458.; National Planning Association, *The Agricultural Research and Marketing Act of 1946: A Consideration of Basic Objectives and Procedures* (Washington: National Planning Association, 1948); Douglas E. Bowers, "The Research and Marketing Act of 1946 and Its Effects on Agricultural Marketing Research," *Agricultural History* 56 (Jan 1982): 249-63; James L. Forsythe, "Clifford Hope of Kansas: Practical Congressman and Agrarian Idealist," *Agricultural History* 51 (Apr. 1977): 407-20; Lewis C. Mainzer, "Science in a Political Context: The Agricultural Research and Marketing Act Program," (Ph.D. diss., University of Chicago, 1957).

⁷⁴ Charles F. Brannan to Allan B. Kline, Sep. 23, 1950, RG 16, Entry 17, Box 1711, Folder 2; Allen J. Matusow, *Farm Policies and Politics in the Truman Years* (Cambridge, MA: Harvard University Press, 1967); Kirkendall, *Social Scientists*; Reo Millard Christenson, *The Brannan Plan* (Ann Arbor: University of Michigan Press, 1959); Virgil W. Dean, "Why Not the Brannan Plan?," *Agricultural History* 70 (Spring 1996): 268-82; Robert Griffith, "Forging America's Postwar Order: Domestic Politics and Political Economy in the Age of Truman," in *The Truman Presidency*, ed. Michael J. Lacey (Cambridge: Cambridge University Press, 1989), 75-8. Brannan's case was not helped by his inability to clearly communicate to consumers how the plan would actually lower food costs; see, e.g.,

become increasingly enamored of Keynesian theories that pointed towards steady consumption as the key to a healthy economy. The new economics stressed mass consumption rather than mass production as the key to steady growth and widespread abundance.⁷⁵ Third, there was the problem of inflation. Public opinion polls in the late 1940s and 1950s consistently ranked the rising cost of living as one of the most pressing domestic concerns of middle-class consumers.⁷⁶ Food, in particular, was constantly rising in price, and the New Deal system of guaranteeing farmers a "parity" price for their commodities seemed to many to be the cause. As one woman wrote to her senator in 1949, "I understand that the potato farmers in Aroostook County in Maine are getting rich, and riding around in their Cadillacs, while poor people like us pay the bills."⁷⁷ A 1951 editorial in the *New York Times* expressed a common sentiment, attacking the agricultural price support system as a drag on the entire economy: "Food is the No. 1 item in the wage-earner's budget. If the price keeps rising, how can wages and the rest of the economy be stabilized?"⁷⁸ Given these pressures, even Democratic politicians from farm states became increasingly uncomfortable with the New Deal program of raising farmers' incomes by using the heavy hand of the state to raise the price of food for consumers. The new agricultural program, Congressmen decided, should rely less on politically controversial economic regulations and price supports, and more on technologies of distribution and marketing.⁷⁹

It was one thing for the USDA's economists and engineers to receive a sharp rebuke from Congress for their previous neglect of the consumption side of the agricultural economy. It was

Persia Campbell to Charles F. Brannan, Oct. 12, 1949, RG 16, Entry 17, Box 1712, Folder 2; Charles F. Brannan to Marie Murtaugh, Oct. 20, 1949, *ibid.*, Folder 1.

⁷⁵ Alan Brinkley, *The End of Reform: New Deal Liberalism in Recession and War* (New York: Vintage Books, 1995); Alan Wolfe, *America's Impasse: The Rise and Fall of the Politics of Growth* (New York: Pantheon Books, 1981); Robert M. Collins, "The Emergence of Economic Growthsmanship in the United States: Federal Policy and Economic Knowledge in the Truman Years," in *The State and Economic Knowledge: The American and British Experience*, ed. Mary O. Furner and Barry Supple (Cambridge: Cambridge University Press, 1990), 138-70; Robert M. Collins, *The Business Response to Keynes, 1929-1964* (New York: Columbia University Press, 1981); Trudy H. Peterson, *Agricultural Exports, Farm Income, and the Eisenhower Administration* (Lincoln: University of Nebraska Press, 1979).

⁷⁶ Meg Jacobs, "Inflation: The 'Permanent Dilemma' of the American Middle Classes," in *Social Contracts under Stress: The Middle Classes of America, Europe, and Japan at the Turn of the Century*, ed. Olivier Zunz, Leonard Schoppa, and Nobuhiro Hiwatari (New York: Sage, 2002), 130-53; "Price Index Rises to a Record High," *NYT*, Jul. 25, 1952, 1, 15; Charles E. Egan, "Arnall Insistent Prices Will Go Up," *NYT*, Aug. 14, 1952, 1, 24.

⁷⁷ Katherine N. Small to Sen. Leverett Saltonstall, Apr. 14, 1949, RG 16, Entry 17, Box 1709, Folder 1. See also C. V. Byrd to Charles F. Brannan, Dec. 9, 1949, *ibid.*, Box 1712, Folder 3, and dozens of similar letters in these folders.

⁷⁸ Joseph A. Loftus, "Parity Issue at Root of the Price Problem," *NYT*, Apr. 1, 1951, 151.

⁷⁹ "Price Spread from Farm to Table out of Line, Gillette Says at Hearing," *NYT*, Sep. 23, 1949, 1, 26, USDA History Collection, National Agricultural Library, Special Collections, Beltsville, MD (hereafter USDA History Collection), Box 1.3/16, Folder VI B4.

entirely another that they received significant funding to start research projects—upwards of \$30 million in the first 5 years after the RMA's passage. Agricultural engineers and economists eagerly embarked on literally thousands of research projects, studying everything from turning corn into automobile fuel to developing dehydro-frozen food to studying the economics of air transport of grain. The majority of studies, however, focused on down-to-earth questions of how to make it cheaper for farmers and food processors to get their products to market.⁸⁰ For instance, a 1953 economic study funded by the RMA found that the cost of loading and unloading apples in warehouses could be reduced by up to 80% by the use of forklifts in place of belt conveyors.⁸¹ Other RMA-funded economists sought similar technological methods for reducing costs in the marketing of milk (milk should be hauled in bulk tanks, not cans); perishable fruits and vegetables (retailers should demand careful handling in packing houses to reduce spoilage); and livestock (beef packers should modernize their stockyards to maximize the rate of feeding and slaughter).⁸² Engineers, meanwhile, focused on such activities as improving corn and soybean drying and storage, using sorting machines to increase the efficiency of tomato processing plants, and developing standardized containers and packages for retail delivery of food products.⁸³

Even after Congress officially cancelled the Research and Marketing Act in 1955 due to unclear results, such studies continued well into the 1960s. This was largely because Dwight Eisenhower's Secretary of Agriculture, Ezra Taft Benson, created a permanently funded agency within the USDA to work on the problem of efficiently marketing food. Benson claimed to be

⁸⁰ USDA, Agricultural Research Administration, *Report of Activities under the Research and Marketing Act* (Washington: GPO, 1951-53); Lester Tanzer, "Farm Scientists: Agriculture Department Researchers Seek New Uses for Surplus Goods," *Wall Street Journal* (hereafter *WSJ*), May 26, 1954, 1, 17; Mark R. Finlay, "The Industrial Utilization of Farm Products and By-Products: The USDA Regional Research Laboratories," *Agricultural History* 64 (Spring 1990): 41-52.

⁸¹ Earl W. Carlsen, *Apple Handling Methods and Equipment in Pacific Northwest Packing and Storage Houses* (Washington: USDA, Production and Marketing Administration, 1953).

⁸² Joseph M. Cowden, *Farm-to-Plant Milk Hauling Practices of Dairy Cooperatives* (Washington: Farm Credit Administration, USDA, 1952); Henry T. Badger, *Retail Margins for Selected Fresh Fruits and Vegetables* (Washington: USDA, Bureau of Agricultural Economics, 1953); George E. Turner and Clayton Furman Brasington, *Livestock Auction Markets in the Southeast: Methods and Facilities* (Washington: USDA, Agricultural Marketing Service, 1956).

⁸³ *Drying Ear Corn with Heated Air* (Washington: USDA, Agricultural Research Service, 1952); A. M. Rollefson, D. B. Agnew, and C. H. Keirstead, *Improving Soybean Marketing through Farm Storage* (Washington: USDA, Production and Marketing Administration, 1951); William A. Aronow and James E. Bryan, *Prepackaging Tomatoes* (Washington: USDA, Production and Marketing Administration, 1952); E. M. Harvey, *A Comparison of Types of Containers, Refrigeration, and Loads in the Transportation of Non-Precooled Navel Oranges in Half-Box Fiberboard Cartons* (Washington: USDA, Agricultural Marketing Service, 1956).

"above politics" due to his deep Mormon faith and his training as an economist, but his actions as head of the USDA were quite explicitly aimed at defusing the socialistic tendencies of New Deal agricultural policy. Brought on board by Eisenhower as part of a strategy to woo the farm vote away from the Democrats after five straight Presidential losses for the Republicans, Benson began a systematic effort to develop cooperative relationships between the federal government and private industry to solve the farm problem from the demand side rather than through centralized economic planning on the supply side. Immediately after taking office in 1953, he eliminated the Bureau of Agricultural Economics (BAE), claiming that too much of the BAE's economic research had focused on maintaining statist New Deal price supports and acreage allotments (that is, paying farmers to keep some lands out of production).⁸⁴ In the BAE's stead, Benson erected two agencies, the Agricultural Research Service and the Agricultural Marketing Service. Through these agencies, he hoped to redirect the work of agricultural engineers and economists toward what he considered more "objective" marketing research.⁸⁵ Though Benson summed up his approach to agricultural policy as the "freedom to farm," the term "agribusiness" (coined by Benson's Assistant Secretary of Agriculture, Harvard economist John H. Davis, in 1954) was a more accurate descriptor, since the "objective" marketing research would prove most beneficial to non-farm agricultural industries, especially food processors and supermarkets.⁸⁶ Consequently, the cancellation of the Research and Marketing Act in 1955 did not end its rationale of solving the farm problem through technological efforts to streamline food marketing. In fact, projects similar to those funded by the Research and Marketing Act only became more numerous under Benson's secretaryship. For example, RMA-funded work on bulk milk hauling, begun in the early 1950s, expanded significantly when it was transferred to the

⁸⁴ Since its inception in the 1920s, the BAE had long relied on cultivating a relationship to commercial agricultural interest groups to support its vision of centralized agricultural policy and planning. During the New Deal era, the BAE served as the central planning and policy wing of the USDA, gaining enemies on both the left and the right of the political spectrum. Ellis R. Hawley, "Economic Inquiry and the State in New Era America: Anti-statist Corporatism and Positive Statism in Uneasy Coexistence," in *The State and Economic Knowledge*, ed. Furner and Supple, 287-324; Kirkendall, *Social Scientists and Farm Politics*.

⁸⁵ Edward L. Schapsmeier and Frederick H. Schapsmeier, *Ezra Taft Benson and the Politics of Agriculture: The Eisenhower Years, 1953-1961* (Danville, IL: Interstate Printers and Publishers, 1975).

⁸⁶ Ezra Taft Benson, *Freedom to Farm* (New York: Doubleday, 1960); Jon Lauck, *American Agriculture and the Problem of Monopoly: The Political Economy of Grain Belt Farming, 1953-1980* (Lincoln: University of Nebraska Press, 2000), 5.

Agricultural Marketing Service in the years after the RMA's cancellation.⁸⁷ Other large-scale projects of the late 1950s and 1960s studied the efficient marketing of frozen orange juice, ways to reduce the need for skilled labor in food processing and retailing industries, and the proper design of food storage warehouses.⁸⁸ In hundreds of other studies, USDA economists and engineers sought to improve efficiency in marketing and distribution, covering every major agricultural commodity produced in the United States, always doing so in direct cooperation with food processing and retailing firms.

The intent of Benson's "objective" approach was to convert the farm problem into an industrial problem—to place in the hands of private industry, rather than the federal government, the burden of assuring high prices for farmers while offering consumers abundance at reasonable costs. As a sympathetic agricultural economist explained to Benson's Assistant Secretary of Agriculture Earl Butz in 1956, the Department's focus on marketing research was "safe, sane, conservative [and] socially desirable [because] everybody, including farmers, stands to gain from it."⁸⁹ But the new approach to marketing research was not entirely without controversy, as Harry C. Trelogan, Director of the USDA's Marketing Research Division, noted in responding to Allin's letter. In particular, the applications of marketing research appeared to be most directly beneficial to food processors and supermarkets rather than to either farmers or consumers. The term "agribusiness," though still not in wide circulation, could hold negative as well as positive connotations.⁹⁰ Trelogan's note pointed to a tension within the USDA's ranks. Secretary of Agriculture Benson touted "objective" marketing research that was intended to influence and change practices in private food distribution, but some agricultural economists

⁸⁷ Donald B. Agnew, *How Bulk Assembly Changes Milk Marketing Costs* (Washington: USDA, Agricultural Marketing Service, 1957); Bowers, "Research and Marketing Act," 262; Schapsmeier and Schapsmeier, *Ezra Taft Benson*.

⁸⁸ Roy L. Lassiter, Jr. and George L. Capel, *Economic Characteristics of the Florida Chilled Citrus Juice Industry* (Washington: USDA, Agricultural Marketing Service, 1959); Imogene Bright, *The Wage Factor in Retailing Meat in 4 Cities: A Study of Marketing of Agricultural Products* (Washington: USDA, Agricultural Marketing Service, 1957); Robert K. Bogardus, *Wholesale Fruit and Vegetable Warehouses: Guides for Layout and Design* (Washington: USDA, Agricultural Marketing Service, 1961).

⁸⁹ Bushrod W. Allin (Chairman, Outlook and Situation Board) to Earl L. Butz, Aug. 2, 1956, RG 136, Office of the Administrator Correspondence Subject File, 1956-59, Entry 48 (hereafter Entry 48), Box 9, Public Relations 7 Folder.

⁹⁰ Harry C. Trelogan to Bushrod Allin, Dec. 21, 1956, RG 136, Entry 48, Box 9, Public Relations 7 Folder. See also Charles A. Hauck, "Team Work in Marketing Research," Speech before American Farm Economic Association meeting, Green Lake, WI, Sep. 8, 1947, RG 136, Office of the Administrator Deputy Administrator's Correspondence Subject File, Entry 52, Box 4.

whose work supported these activities preferred a "strong program of fundamental longer-run research" rather than "being too closely associated with 'action' programs."⁹¹ But in the long run, Benson's approach won out within the USDA, as he pushed the AMS and the ARS to work very closely with private industry, particularly food processors and supermarkets, to develop lower-cost marketing and distribution methods as a demand-side approach to increasing the farmer's share of the consumer's dollar.⁹²

In the twenty years following the end of World War II, the farm problem was thus redefined. Before the war, agricultural experts—BAE economists, farm bloc Congressmen, Henry A. Wallace—had seen the essential problem as one of overproduction. Now, in a political culture focused on maintaining abundance without the use of "socialist" methods, the problem seemed to be one of inefficient marketing. The key issue at stake in postwar agricultural politics was what the role of the state should be, vis-à-vis private enterprise, in dealing with the problem of maintaining high prices for farmers without unduly raising consumer food prices. This formulation of the farm problem directly linked the politics of production with the politics of consumption. Agricultural policymakers saw marketing—understood as "the link between production and consumption ... assembly, transportation, packing, packaging, processing, preservation, storing, wholesaling, and retailing—all the steps between producer and consumer"—as the point of attack.⁹³ Agricultural economists in the USDA's marketing divisions consistently viewed all of the processes involved in transforming agricultural commodities into consumable foods as part of an integrated machine, a machine that was at once technological and political. For example, just before the end of World War II, economist Clarence W. Kitchen, associate administrator of the USDA's Agricultural Marketing Administration, wrote a letter to a farm journal editor explaining the importance of having "the marketing machinery function as efficiently as possible" after the war. According to Kitchen, labor shortages during the war had forced food processors and retailers to move more commodities into food markets with fewer

⁹¹ O. V. Wells, et al., "The Fragmentation of the BAE," *Journal of Farm Economics* 36 (Feb 1954): 1-21, quotes on 4 and 6.

⁹² Earl L. Butz, "USDA's Role in Marketing," *Marketing Activities* (Nov. 1954): 3-5, USDA History Collection, Box 1.3/16, Folder VI B4; "Food Distribution: Research, Educational, and Service Work of the U.S. Department of Agriculture," Mar. 1955, RG 136, Entry 42, Box 1, Folder 14, pp. 3-4.

⁹³ Roy W. Lennartson, "Between the Farmer and Consumer," in USDA, *Yearbook of Agriculture, 1950-1951: Crops in Peace and War* (Washington: GPO, 1951), 49.

workers, with the result that the farmer's share of the consumer's food dollar had increased. Efficient marketing machinery, in this formulation, would simultaneously bring abundance to consumers and high prices to farmers.⁹⁴

To put it bluntly, an efficient marketing machine would be a system that moved food from farms to consumers with the smallest number of intermediary firms—whether food processors, wholesalers, or retailers—paying workers' wages and taking profits along the way. Agricultural economists working with food industries under the RMA focused on decreasing the cost of food distribution to raise the farmer's share of the consumer's dollar. Much of this research involved improved packaging techniques, warehousing and retailing methods, and reducing the need for skilled labor in the food marketing chain. The cost of transportation, however, attracted the most attention from USDA economists. Although the cost of labor contributed the greatest increase in the price of food between the farmer and the consumer, transportation had always followed close behind labor in percentage of costs incurred in the marketing of agricultural goods and food products.⁹⁵ Unlike workers, though, transportation technologies could be re-engineered with less need for political delicacy. If the cost of transportation could only be kept down, argued a 1956 USDA pamphlet meant for wide readership entitled "Food Transportation and What It Costs Us," farmers' incomes would automatically rise even as consumer prices dropped.⁹⁶

The Technopolitics of Flexible Transportation

One key word—*flexibility*—summed up all that agricultural experts in the USDA imagined trucking would bring to the domestic marketing of crops, livestock, and food in the postwar period. Agricultural engineers, economists, and policymakers all regarded trucking as a

⁹⁴ C. W. Kitchen (Deputy Director, Agricultural Marketing Administration) to J. H. Welch, Dec. 30, 1944, RG 136, Fruit and Vegetable Branch, Subject-Numeric General Correspondence, Entry 58, Box 3, Folder 6.

⁹⁵ John H. Davis to Rep. Alvin M. Bentley, Feb. 25, 1954, RG 136, Correspondence of the Secretary of Agriculture and Assistant Secretaries of Agriculture Relating to the AMS, 1954, Entry 18, Box 1, Folder 2; Bennett S. White, Jr. to C. W. Odermatt, Nov. 9, 1953, RG 136, Project Files, 1940-58, Entry 11, Box 28; *Farm-Retail Spreads for Food Products: Costs, Prices* (Washington: USDA, Agricultural Marketing Service, 1957); Ralph L. Dewey and James C. Nelson, "The Transportation Problem of Agriculture," in USDA, *Yearbook of Agriculture, 1940: Farmers in a Changing World* (Washington: GPO, 1940), pp. 720-39; G. L. Penrose, L. T. Fuller, and J. B. Sharkey, *Transportation Spells Markets*, Bulletin 167: Oregon Agricultural Experiment Station, 1950).

⁹⁶ *Food Transportation and What It Costs Us* (Washington: USDA, Agricultural Marketing Service, 1956).

more flexible system of transportation than railroads, but each of these groups had a slightly different idea of what flexibility entailed. For engineers, trucks could provide faster and more reliable hauling than railroads mainly because truckers were better able to provide customized hauling services. Trains hauled an incredibly diverse range of products, using a variety of railcars and switching mechanisms to move goods over long distances; but even with specialized railcars, each load was just one unit among many with widely varying needs and destinations. Each semi-trailer, on the other hand, hauled only one commodity, directly from the point of origin to its destination. The commodity itself, rather than the transporter's need to limit investments in equipment, determined which type of hauling equipment would be used. Mechanically refrigerated trailers, custom livestock hauling trailers, bulk tankers for milk and oils, and grain hoppers could be designed and implemented for each specific commodity. Furthermore, truckers could provide the specialized service needed to make sure that each load arrived quickly at its destination with little damage. Truck trailers could be designed, for example, to accept standardized bulk packages of potatoes that would keep handling to a minimum during exchanges among farmers, potato processing facilities, warehouses, and retail stores. In summer, potatoes could travel in ventilated trailers to prevent degradation, while in winter they could be protected against freezing in enclosed trailers. Other commodities, from grains to livestock to dairy products to fresh and frozen fruits and vegetables, had similarly customized transportation requirements that, from an engineering standpoint, trucks often seemed most capable of providing.⁹⁷

Economists, meanwhile, tended to define trucking's flexibility in terms of systemic marketing efficiency. Railroads, in order to operate profitably, needed months of advance notice from shippers in order to allocate the appropriate number of cars to pick up a specific load at a particular time. The fickleness of climate, weather, and biology, however, has always created fluctuations in agricultural production. At the time of planting, a farmer could only make an

⁹⁷ More on this point in Chapter 4. William J. Hudson and Don C. Leavens, "The Kinds and Uses of Carriers," in USDA, *Yearbook of Agriculture* (Washington: GPO, 1954), 96-7; Forrest S. Baker, Jr., "Efficiency in Transportation Packaging," *Journal of Farm Economics* 46 (Dec 1964): 1292-4; E. P. Atrops and W. H. Redit, *Protective Services for Shipments of Carton Loads of California Oranges and Lemons* (Washington: USDA, Agricultural Marketing Service, 1962); H. D. Johnson and P. L. Breakiron, *Protecting Perishable Foods during Transportation by Truck: Meats, Fruits, Melons, Vegetables, Poultry, Dairy Products* (Washington: USDA, Agricultural Marketing Service, 1956).

educated guess as to how big his crop would be come harvest time; if a grain farmer ordered three railcars to arrive in the second week of October to take his grain to market, he might only be able to fill one of those cars, or might have a bumper crop that required several more cars than the railroad could provide on short notice. Truckers, on the other hand, could arrive to collect a shipment of any size with only a few days' or even hours' notice; from an economist's viewpoint, this "just-in-time" transportation was a much more efficient allocation of resources. As one agricultural economist summed up the issue in 1969, "Nature determines to a very large degree how much transportation will be needed, when it will be needed, and where it will be needed.... In many cases, a saving of hours—not days or weeks—in transportation time can mean better prices for the producer or distributor, longer shelf life for the product, and better satisfied consumers."⁹⁸ Furthermore, because truckers hauled relatively smaller loads of products at greater speed than railroads, they provided food processors and supermarkets with the means to increase the rate of turnover of their products during periods of high demand. This form of flexibility was important because a high rate of turnover was one of the most effective ways to assure secure profit levels for farmers and food distributors without the need to raise food prices for consumers. Furthermore, as we shall see in later chapters, trucks and highways helped food processors and supermarkets to upend the economic geography of food production and distribution in the 1950s and 1960s, pushing food factories and supermarket warehouses deep into the countryside to lower labor costs and eliminate competition from smaller firms such as independent food distributors. Postwar agricultural economists tended to define trucking's flexibility in terms of efficiency. Quick, on-demand movement of a variety of goods from decentralized producers to suburban consumers would bring stability to an otherwise constantly fluctuating food economy.⁹⁹

Agricultural policymakers, meanwhile, tended to conceive of trucking's flexibility in terms of competition with the railroads. For policymakers of the postwar period hoping to

⁹⁸ Ivon W. Ulrey, *The Economics of Farm Products Transportation* (Washington: USDA, Economic Research Service, 1969), 1.

⁹⁹ John C. Winter, "A Century of Progress," in USDA, *Yearbook of Agriculture* (Washington: GPO, 1954), 100; Donald E. Church and Margaret R. Purcell, "From Farms to First Market," in USDA, *Yearbook of Agriculture* (Washington: GPO, 1954), 87-92; David E. Moser and Wesley R. Kriebel, *Transportation in Agriculture and Business* (Columbia: University of Missouri Extension, 1964); J. K. Samuels, "The Right Product; The Right Place," in USDA, *Yearbook of Agriculture* (Washington: GPO, 1960), 276-81.

reduce the cost of transporting agricultural products, the very presence of trucks as significant competitors to railroads promised lower freight rates for all shipments, whether by road or rail. Policy debates consequently centered on how best to encourage trucking's growth, without creating a new monopolistic transportation industry by pushing railroads into bankruptcy.¹⁰⁰ Federal highway building proved to be the single most important policy decision that gave truckers incentives to compete with railroads in the postwar period. Agricultural policymakers, however, had little direct influence on the development of national highway policy after the Bureau of Public Roads moved from the Department of Agriculture to the Department of Commerce in 1949. The Department of Agriculture did have significant influence on other facets of transportation policy, however, particularly when it came to minimizing government regulations on truckers' geographic reach and ability to compete with other carriers. Perhaps most important, the USDA successfully reworked the "agricultural exemption" clause of the Motor Carrier Act of 1935 into a method for harnessing the chaos of unregulated trucking to the demands of rationalized food marketing systems. Ultimately, the anti-regulatory stance of the USDA in relation to trucking policy served to maintain an atomistic structure in the industry, preventing the rise of large unionized firms in agricultural transportation. Especially under the direction of Ezra Taft Benson, agricultural policymakers saw non-union labor relations in trucking as more flexible than that of railroading, and sought to keep it that way. From a policy standpoint, then, trucks were more flexible than trains because they could more easily avoid cumbersome interference from both government regulators and organized labor.

Trucks became true competitors with trains for long hauls of agricultural commodities and processed foods following the war, a fact that became especially apparent after the construction of the Interstate Highway System in the late 1950s. Good highways and giant trucks provided a new infrastructure for the postwar food economy, allowing food processors and supermarkets to achieve greater control over the movement of food from farms to suburban consumers, particularly by decentralizing the geography of their operations while simultaneously centralizing their economic control in the food economy. The flexibility of

¹⁰⁰ Hoy A. Richards, "Coordination and Competition among Carriers," in *Transportation Problems and Policies in the Trans-Missouri West*, ed. Jack R. Davidson and Howard W. Ottoson (Lincoln: University of Nebraska Press, 1967), 287-98.

trucking proved key to this shift, but that flexibility was at least partly the product of efforts by USDA economists and policymakers to inject some chaos into the nation's transportation structure to counter the ICC's regulatory impulse. These efforts came mainly in the form of legal and administrative struggles to expand the "agricultural exemption," allowing truckers hauling even processed foods to avoid the economic regulations of the ICC. The result, on one level, was to make "independent" (non-union) truck drivers the backbone of much of the American food economy. On another level, the transportation work of the USDA helped "solve" the farm problem by the late 1970s, not by actually reducing the actual cost of distributing farm products or increasing farmers' incomes, nor even by ending government involvement in the agricultural economy, but by converting it from a farm problem to an industrial problem—the politics of food pricing by the late 1970s were fought most directly in the marketplace rather than in the electoral sphere.

The expansion of long-haul trucking in the postwar period depended on a shift in federal highway policy, away from rural farm-to-market roads and towards a coordinated system of high-speed interstate highways. The Federal-Aid Highway Act of 1956 set in motion the construction of a 41,000-mile limited-access interstate highway system. The passage of that legislation resulted from decades of agitation by various highway users, decades of agitation characterized by a failure of the different groups to agree on anything other than their desire for more roads. Automobile clubs such as the American Automobile Association had called for fast intercity highways since the 1910s, promoting their funding through either gasoline taxes or tolls, which trucking companies refused to pay. Farmers wanted farm-to-market roads funded by general tax revenues, while urban planners called for federal funding for expressways as tools for urban renewal. In the Federal-Aid Highway Act of 1944, Congress responded to these conflicting demands by appropriating \$1.5 billion for road construction, but without designating funds to build a planned interstate expressway system. Road construction consequently fell mainly to the dictates of state engineers, who were committed to moving traffic efficiently over existing highways rather than building an entirely new system. By 1950, the number of registered passenger cars doubled from the 1940 figure of 27 million, while trucking freight

increased one-third between 1949 and 1950. State-funded highway construction fell behind, leading to congestion and deterioration of outdated roads.

The National Highway Users Conference (established in 1932 by General Motors chairman Alfred Sloan) initiated Project Adequate Roads in 1951 to demand strict highway rating standards to force federal financing of intercity expressways. Although backed by powerful lobbyists—including the American Automobile Association, petroleum firms, road contractors, and auto manufacturers—the project resulted only in publicity since truckers continued to refuse to accept the higher gasoline taxes proposed to finance the plan. Serious federal commitment to interstates did not come until 1954, when President Eisenhower, influenced by his Council of Economic Advisers, sought dramatically increased highway construction to create jobs and economic growth. In July 1954, the president established an Advisory Committee on a National Highway Program to work with the groups represented in Project Adequate Roads, along with state governors and congressional representatives, to hammer out a compromise that would allow a dramatic increase in federal highway funding. The solution came in June 1956 with the invention of the Highway Trust Fund, which tied highway financing directly to federal taxes on fuel and tires. The more cars and trucks Americans bought, the more highways they would get. With federal funding guaranteed at 90% of cost through the target completion date of 1969, interstates rapidly expanded.¹⁰¹

Along with a growing high-speed highway network came a dramatic increase in the size of trucks, making long-haul trucking possible. Before the war, the great majority of trucks traveling on America's highways were not big rigs traveling long distances. In 1940, for instance, 79 percent of the nation's trucks traveling on main roads were "straight trucks" (without a separate trailer unit), averaging hauls of only 2 1/4 tons apiece (see **Figure 1.1**). Larger truck-and-trailer combinations, either in the form of semi-trailers (a trailer supported at its front end by the tractor's "fifth wheel" rather than by its own wheels) or a full tractor-trailer (with the

¹⁰¹ These two paragraphs summarize the work of the two best books on the history of the Interstate Highway System: Mark H. Rose, *Interstate: Express Highway Politics, 1939-1989*, 2d ed. (Knoxville: University of Tennessee Press, 1990) and Seely, *Building the American Highway System*, esp. 137-223. See also Tom Lewis, *Divided Highways: Building the Interstate Highways, Transforming American Life* (New York: Viking Press, 1997); Thomas J. Schlereth, *Reading the Road: U. S. 40 and the American Landscape*, rev. ed. (Knoxville: University of Tennessee Press, 1997).

front end of the trailer running on wheels), could carry significantly more freight—averaging over 7 1/2 tons per load—but made up a minority of the vehicles in use on main rural roads (see **Figure 1.2**). Furthermore, over two-thirds of the ton-miles traveled by trucks in 1940 occurred in *intrastate* commerce, rather than *interstate*; in fact, fully 40 percent of this traffic moved only within a single county.¹⁰² By 1953, however, tractor-trailers, as opposed to straight trucks, carried three-quarters of all highway ton-miles on main rural roads.¹⁰³ Furthermore, the trailers in use grew significantly longer; in 1946 most trailers measured from 22 to 30 feet in length, while by 1966 the average trailer exceeded 40 feet.¹⁰⁴ Many states relaxed their length and weight laws restricting the size of trucks in the mid-1950s, encouraging the trend toward larger trucks; in 1954, trucks over 16,000 pounds gross vehicle weight made up only 11 percent of total registrations; by 1958, their share was 22 percent.¹⁰⁵ These bigger trucks traveled longer distances, as well; whereas the average haul of a common carrier truck in 1944 covered 180 miles, by 1957 the average length traveled was 238 miles.¹⁰⁶

¹⁰² John T. Lynch and Thomas B. Dimmick, "Amount and Characteristics of Trucking on Rural Roads," *Public Roads* (Jul.-Sep. 1943): 216-7, 226, 228-9.

¹⁰³ Interstate Commerce Commission, *Monthly Comment on Transportation Statistics* (Apr. 18, 1955): 12; Thomas B. Dimmick, "Trends in Traffic Volume, Vehicle Types, and Weights," *Public Roads* (Dec. 1953): 240.

¹⁰⁴ Harold M. Levinson, et al., *Collective Bargaining and Technological Change in American Transportation* (Evanston, IL: Transportation Center at Northwestern University, 1971), 39.

¹⁰⁵ "Detroit Capitalizes on the Surge in Sales of Highway Giants," *Business Week*, May 23, 1959, 170; "Interstate Trucking Grows with Liberalization," *Power Wagon* (May 1956): 4.

¹⁰⁶ American Trucking Associations, *American Trucking Trends* (Washington: American Trucking Associations, 1959), 26.



Figure 1.1: A typical straight truck of the 1930s

Straight trucks without a separate trailer unit, such as this one photographed by Harry M. Rhoads in 1930, generally had a capacity in the range of 1 to 2 1/2 tons and were designed primarily for local or regional hauling. Western History/Genealogy Department, Denver Public Library Rh-1681.

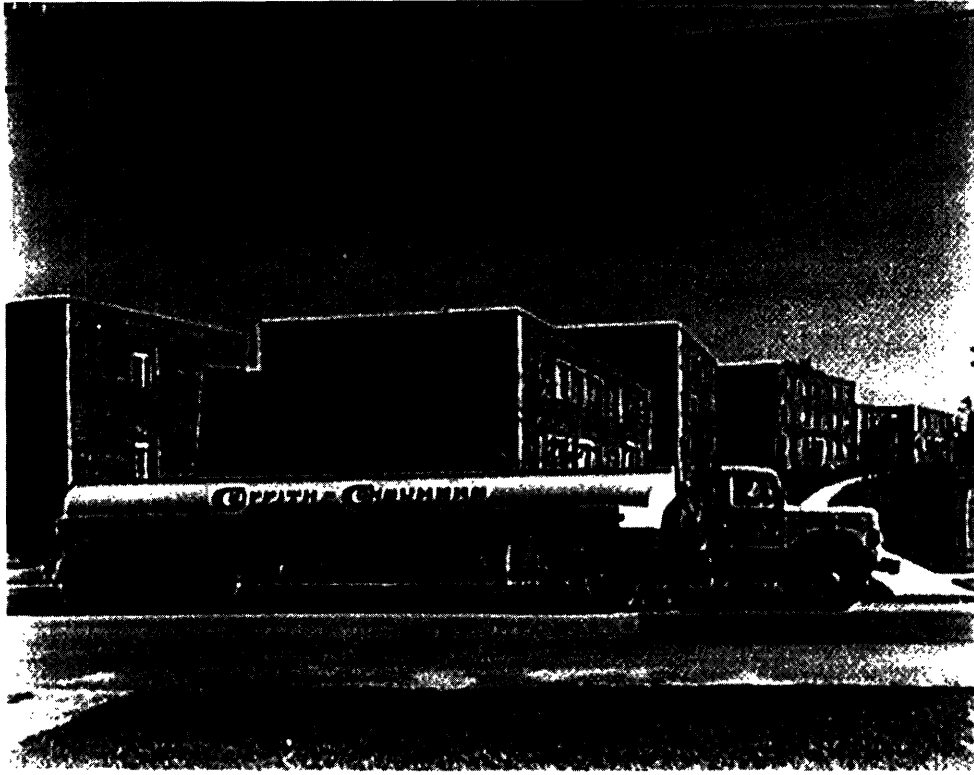


Figure 1.2: A semi-trailer of the 1950s

A semi-trailer combination, with the front end of the trailer attached to a fifth wheel on the tractor's chassis, allowed truckers to haul much larger payloads for longer distances than straight trucks. Full trailers that rested on their own front wheel assembly were less common than semi-trailers. Library of Congress, Prints and Photographs Division, Theodor Horydczak Collection, LC-H814- 0725-114.

As trucking became increasingly long-haul, the nation's railroads found themselves facing a new kind of competition. Prior to the war, trucks had competed with rails primarily for short-haul traffic, but after the war truckers increasingly vied for transportation of goods over distances of hundreds, even thousands of miles. Railroads in 1944 accounted for 69 percent of intercity ton-miles, while truckers hauled about 5 percent; by 1958 the railroads carried 45 percent and truckers 21 percent of intercity ton-miles.¹⁰⁷ Even more importantly, the rails increasingly lost more valuable types of freight to truckers, so that railroads' share of gross freight revenues dropped from 80 percent in 1944 to 52 percent in 1958, while truck revenues

¹⁰⁷ Ibid., 6.

increased from 15 to 39 percent of total revenues in that period.¹⁰⁸ Initially, the railroads fought back with advertising campaigns claiming that truckers did not pay their fair share of road and gasoline taxes. The rails also flexed their muscle in state legislatures, as they did in 1953 to kill a so-called "big truck bill" in Pennsylvania that would have allowed an increase in maximum truck weights in the state from 45,000 to 60,000 pounds. The case gained national headlines when a group of trucking firms sued thirty-one eastern railroad companies, claiming they had bribed state officials and made secret payments to civic leaders to spread negative publicity about the trucking industry.¹⁰⁹ When such tactics proved ineffective, however, the rails began a long-term change in business practice and technological development, focusing their efforts on long hauls of heavy, non-perishable bulk commodities such as coal and grain. Trucks did not "replace" trains by any means in the postwar era; they simply replaced trains as the nation's primary general-purpose mode of freight transportation, while railroads became specialized freight carriers and automobiles and planes became the main movers of passengers.¹¹⁰

Trucks did, however, largely replace trains in agricultural and food hauling in the postwar period. By 1958, nearly 90 percent of all agricultural commodities traveled from farm to first market by truck. This was especially the case for highly perishable commodities such as fruits and vegetables, milk, and livestock.¹¹¹ Take the case of cattle: in 1945, a little more than half—58 percent—of cattle arrived at livestock terminals by truck; by 1958, 88 percent did so, and a decade later nearly all cattle traveled by truck to market.¹¹² At the same time, trucks became the primary transportation mode for foodstuffs; in 1964, half of all foods (by volume) moved by truck.¹¹³ Trucks were especially important in moving meat, milk, cheese, and frozen foods, though railroads continued to be the primary transporters of less perishable goods such

¹⁰⁸ American Trucking Associations, *American Trucking Trends* (1960), 11.

¹⁰⁹ "Truck Firms Will Ask U.S. to Sift 'Criminal' Aspects of Rail Suit," *WSJ*, Jan. 20, 1953; "Truckers Accuse Rails of Undercover Attacks," *Philadelphia Inquirer*, Feb. 18, 1953; "37 Truck Firms Win Suit, Awarded Nominal Damages," *Philadelphia Inquirer*, Oct. 11, 1957, all in Pennsylvania Railroad Company Legal Department Records, Hagley Museum and Library Archives, Wilmington, DE, Box 277, Folder 12.

¹¹⁰ John F. Stover, *The Life and Decline of the American Railroad* (New York: Oxford University Press, 1970), 234-71; Albro Martin, *Railroads Triumphant: The Growth, Rejection, and Rebirth of a Vital American Force* (New York: Oxford University Press, 1992), 339-98.

¹¹¹ See Chapters 2, 3, and 4.

¹¹² American Trucking Associations, *American Trucking Trends* (1970-1), 15.

¹¹³ Moser and Kriebel, *Transportation in Agriculture*, 4.

as grain mill products and canned foods.¹¹⁴ But the shift from trains to trucks in agricultural and food hauling was not an automatic consequence of the availability of good roads and big trucks.

Long-haul trucking became central to the postwar food economy because trucks made possible the construction of the marketing machine, a machine that reconstructed the economics as well as the politics of industrial agriculture by streamlining the movement of food from farms to consumers. For the marketing machine to operate efficiently required transportation to link together the nodes of the agribusiness economy—large-scale farmers, corporate food processors, and chain-store supermarkets. Railroads, of course, had provided the linkages between producers and retailers for almost a century, but postwar agricultural economists came to see the rail-based food marketing infrastructure as inefficient. The problem was not that railroads themselves were necessarily inefficient in an economic sense; in fact, railroad transportation had significant theoretical advantages over motor transport on a number of levels. Rail transportation, unlike highway transport, involved very large capital investment in the infrastructure of rights-of-way, rails and crossties, locomotives, railcars, switching and signal systems, sidings, and so forth, while trucking required only a truck and trailer and a road (which truckers helped pay for, but through use taxes and fees, rather than an up-front outlay of capital). Even the largest, fanciest, chromed-out Peterbilt and all-aluminum trailer was always far less expensive than a train locomotive. But the high fixed costs of railroad transportation were counterbalanced by very low unit costs; once the infrastructure for a train was in place, adding another railcar to the train increased the overall cost only marginally. In contrast, the unit costs of trucking firms remained constant rather than decreasing with greater volume of output; the addition of a new tractor-trailer to a trucking fleet did little to change a firm's cost structure. Put simply, railroads could achieve economies of scale, but trucking firms essentially could not.¹¹⁵ But in order to achieve economies of scale, railroads had to dictate to shippers where, when, and how quickly goods would move; any individual shipper's needs were forced to

¹¹⁴ According to the 1967 Census of Transportation, trucks hauled 72% of all meat, 97% of dressed poultry, 70% of all dairy products, 78% of cheese, 98% of frozen seafood, 62% of frozen fruit, vegetables, and juice, but only 43% of grain mill products and 51% of canned foods. United States Bureau of the Census, *1967 Census of Transportation, Vol. 3: Commodity and Special Statistics* (Washington: GPO, 1970).

¹¹⁵ John R. Meyer, et al., *The Economics of Competition in the Transportation Industries* (Cambridge, MA: Harvard University Press, 1959).

conform to the overall needs of the transportation system. What agricultural economists wanted was exactly the opposite—for transportation systems that conformed to the interests of shippers, whether those shippers were farmers, food processors, wholesalers, or retailers.

The USDA's work on produce terminal markets in the postwar period provide a concrete example of how these economic abstractions played out in the real world. In the early twentieth century, railroads provided transportation that was cheap enough to allow southern and California produce farmers to ship their lettuce, beans, asparagus, citrus fruits, and so forth to northern centers of consumption such as New York and Boston, which had previously relied on local farmers for their produce.¹¹⁶ But railroads could only bring crates of produce to a terminal market; moving the fresh fruits and vegetables into the retail markets and produce stands in consumers' communities required the services of a host of wholesalers, graders, jobbers, commission merchants, and local deliverymen, each of whom took a slice of the economic pie. In 1950, Congress debated a bill that would provide federal funding for municipalities to work with USDA marketing specialists to redesign their produce facilities, with the goal of eliminating as many of these middlemen as possible. The hearings had emerged after USDA marketing specialists asked a Congressional subcommittee to investigate wholesale markets around the country in 1949; the subcommittee reported that "most of the country's wholesale markets ... were developed when the horse and wagon, or even the two-wheel cart, comprised the standard methods of transportation and 'when huge trailer trucks and refrigerated cars were unheard of.'"¹¹⁷ William C. Crow, director of the Marketing Facilities Branch of the USDA, testified to the House Agriculture Committee that legislation was necessary to help his office "shorten the distance between the farmer and the consumer by the elimination of unnecessary operations" in wholesale produce markets that had been built in the years before modern highways.¹¹⁸ Crow offered New York City's Washington Street wholesale market as "an example of inadequate

¹¹⁶ James L. McCorkle, Jr., "Agricultural Experiment Stations and Southern Truck Farming," *Agricultural History* 62 (Spring 1988): 234-43; Marc Linder and Lawrence S. Zacharias, *Of Cabbages and Kings County: Agriculture and the Formation of Modern Brooklyn* (Iowa City: University of Iowa Press, 1999); Douglas C. Sackman, *Orange Empire: California and the Fruits of Eden* (Berkeley: University of California Press, 2005); Steven Stoll, *The Fruits of Natural Advantage: Making the Industrial Countryside in California* (Berkeley: University of California Press, 1998).

¹¹⁷ "Food Depots Here 'Most Antiquated'," *NYT*, Dec. 11, 1949, 117, USDA History Collection, Box 1.3/16, Folder VI B4.

¹¹⁸ House Committee on Agriculture, *Development and Improvement of Terminal Marketing Facilities, Hearings*, 81st Cong., 2d sess., Jun. 6-9, 1950, 12.

facilities," since railroads brought produce only as far as the New Jersey side of the Hudson River, at which point cars were unloaded, placed on ferries, and floated across the river to piers at a cost of \$45. At that point, the load was then trucked to the Washington Street market at an additional cost of \$50, but due to traffic congestion local cartage drivers usually had to employ hand porters to carry crates of produce into the market area itself, adding another \$15 to the bill for each carload of goods. From there, produce would pass through the hands of various commission merchants until reaching a buyer's truck, which would then cart the food to a retail store elsewhere in the city. The result, according to Crow, was that approximately one-half of what the "New York housewife paid for her produce at the retail grocers represented the cost of handling the goods after they reached the city."¹¹⁹ As it turned out, Congress refused to pass the bill that would have provided special funding for the USDA to rationalize such produce markets; as Republican representative Thomas Curtis of Missouri put it, the legislation would put the "Federal Government into the business of guaranteeing the cost of these markets."¹²⁰

Even without special funding, however, the USDA's marketing specialists, led by William C. Crow, used funding provided by the Research and Marketing Act to press forward with the reconstruction of produce markets. The USDA's Marketing Facilities Branch provided expertise to several dozen municipalities in the 1950s, reconstructing wholesale produce markets to eliminate "outmoded facilities, poor equipment, poor use of labor, and obsolete handling techniques."¹²¹ The first step was to relocate the market from a crowded downtown area to a large plot of land on a major highway outside the city, allowing tractor-trailers as well as railroads to deliver crates of produce directly to the market without the need for multiple unloadings or hand-cartage. For example, in 1959 the USDA sent two agricultural economists and an architect to Knoxville, Tennessee, to construct an "ideal food distribution facility."¹²² The

¹¹⁹ Ibid., 12-15; "Market Facilities Inadequate in Big Cities for Fruits, Other Perishables, House Hears," *NYT*, Jun. 7, 1950, 48, USDA History Collection, Box 1.3/16, Folder VI B4.

¹²⁰ House Committee on Agriculture, *Marketing Facilities for Perishable Agricultural Commodities*, 84th Cong., 1st sess., Jul. 30, 1955, H. Rept. 1602; *Congressional Record*, 84th Cong., 2nd sess., Jul. 13, 1956, vol. 102, 12747. The bill would have provided up to \$50,000,000 in federally guaranteed loans to municipalities or sub-state regions for the construction of new marketing facilities.

¹²¹ W. C. Crow, "Cutting Marketing Costs through Research," *Marketing Activities* (Nov. 1954): 6-9, USDA History Collection, Box 1.3/16, Folder VI B4.

¹²² Kenneth L. Utter, Notes on proposed Knoxville wholesale food center, n.d. [1959]; Knoxville Chamber of Commerce, Press Release, Jun. 18, 1959; "Food Mart Cost Put at \$2 Million," *Knoxville News-Sentinel*, Jun. 18, 1959, 16, all in RG 136, Entry 43, Box 4.

new market, constructed on a 276-acre paved lot outside of town, replaced multiple downtown wholesale and farmers' markets, providing "one-stop" shopping for retailers—especially supermarket buyers, who could purchase fresh produce, poultry, and eggs by the trailer-load and truck it directly to their suburban stores. Centralizing and relocating wholesale markets on a highway provided the greatest benefits to supermarket chain stores, whose "requirements for uniformity, volume, and continuity of supply" on a railroad-based transportation system forced them to maintain "heavy inventories" in their own warehouses to counteract the uncertainty of rail shipments. With a highway-based wholesale market, supermarkets could send tractor-trailers daily to pick up and deliver uniform loads, reducing their own warehouse inventories and thereby lowering the cost of hiring warehouse workers and limiting the expense of spoilage inherent in rail-based distribution networks (see **Figures 1.3, 1.4, and 1.5**).¹²³ As we shall see in the next three chapters, the reconstruction of produce markets was only one aspect of a much broader effort by agricultural experts cooperating with private industries to move from a centralized railroad-based food distribution network to a decentralized geography of direct highway shipping between farms, food processors, and supermarkets.

¹²³ Samuels, "The Right Product; The Right Place," 278, and John C. Winter, "Railroads, Trucks, and Ships," 305.



Figure 1.3: Grocery store in downtown Knoxville, TN, 1959

Before the construction of a "one-stop shopping" wholesale produce market outside of town, grocers in Knoxville, Tennessee used straight trucks to gather produce and poultry purchased at markets located at multiple rail termini, then transport the goods through crowded city streets to downtown stores. RG 136, Entry 43, Box 4, National Archives II.

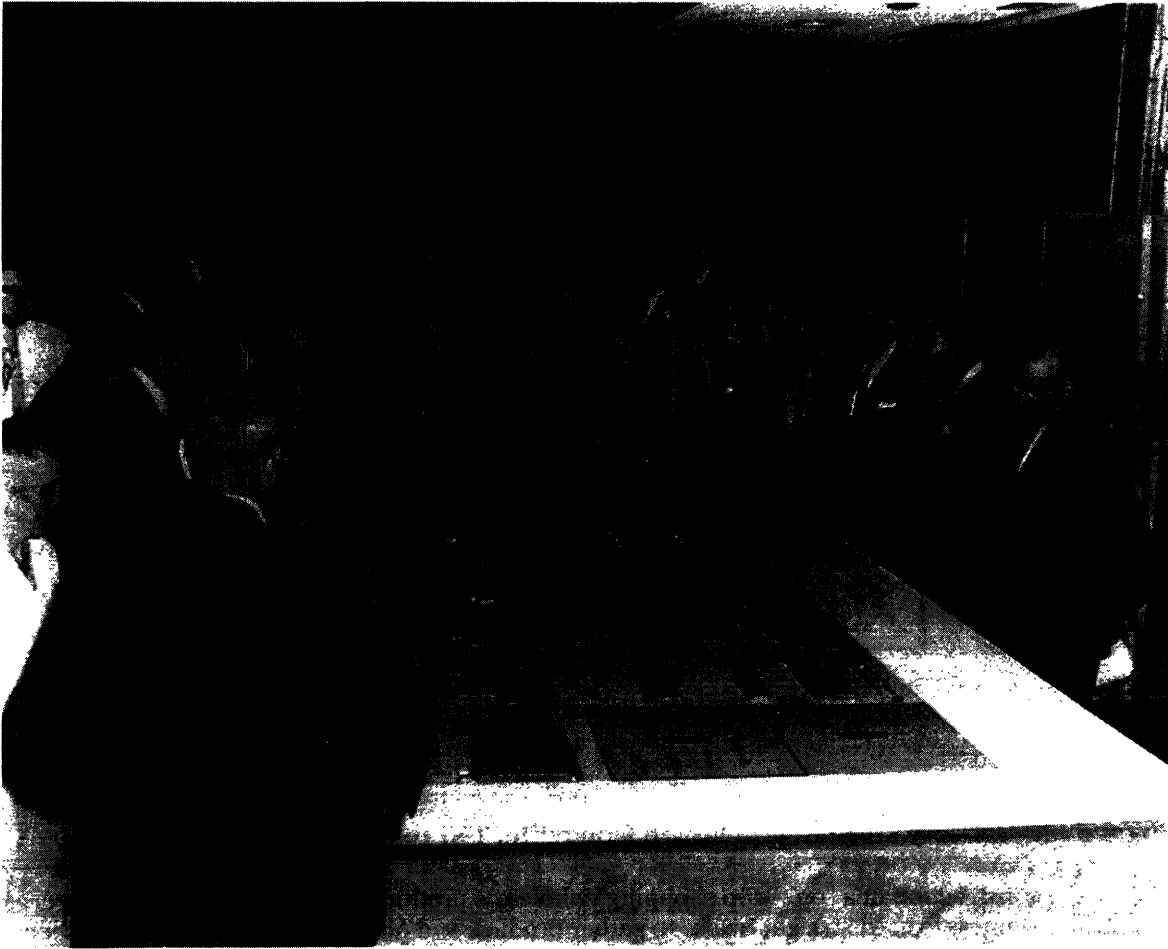


Figure 1.4: Model of ideal food distribution center, 1959

Knoxville area businessmen admire a model of the food distribution center designed by USDA marketing experts to allow space for tractor-trailers to assemble loads of perishable commodities for direct delivery to suburban supermarket loading docks. RG 136, Entry 43, Box 4, National Archives II.

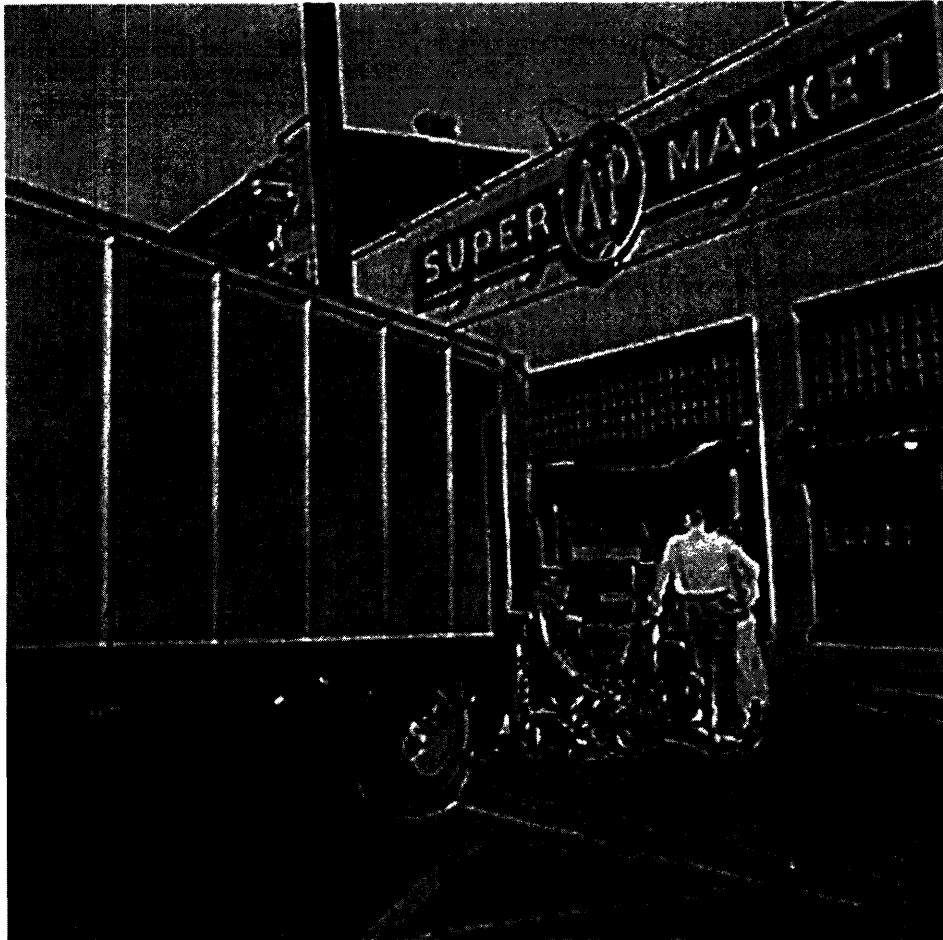


Figure 1.5: Tractor-trailer delivery to a supermarket, 1943

Unlike railroads, tractor-trailers could make deliveries of fresh produce directly to a supermarket loading dock, allowing retailers to keep only minimal warehouse inventories and thereby reduce the expense of warehouse labor and spoilage. Photograph by John Vachon, 1943. Library of Congress, Prints and Photographs Division, Farm Security Administration - Office of War Information Collection, LC-USW3- 021807-E.

Trucks and highways provided technological flexibility, allowing for direct shipment of foods to supermarket loading docks, but agricultural economists and policymakers also saw in trucking a chance to create a form of social flexibility, where "independent" truck drivers working for non-unionized small firms would minimize the labor costs of transporting farm and food products. The key mechanism for maintaining this form of flexibility was the "agricultural exemption" clause of the 1935 Motor Carrier Act, which Congress had included in the Act with the intent of shielding farmers hauling their own products to market from ICC regulation. After

the war, however, as long-haul for-hire trucking expanded and became the primary mode of transporting agricultural goods to market, the USDA sought to expand the exemption's applicability. The first opportunity for the USDA to do this came in 1947, when the ICC heard the petition of one Norman E. Harwood, who owned a single refrigerated tractor-trailer, for authority to transport washed salad packaged in cellophane bags by the Aunt Mid Company in Detroit to grocers in Michigan, Illinois, Ohio, and Indiana. In hearing the petition, the ICC's chief examiner for motor carrier cases, Francis P. Lee, recommended that Harwood's request be denied on the grounds that washed salad was an "agricultural commodity, not including manufactured products thereof" and thus fell within the scope of the agricultural exemption. The two other ICC commissioners, however, determined that placing the salad in cellophane bags constituted a process of manufacturing, and required Harwood to be certified as a regulated trucker, a certificate that the Commission granted.¹²⁴

Transportation economists in the USDA's Marketing Facilities Branch immediately recognized the implications of this decision—if packaged salad counted as a manufactured product, the ICC could expand its regulatory power to truckers hauling any packaged or minimally processed agricultural product. This would effectively limit the agricultural exemption to very few commodities, meaning that most shippers of food products would be required to use the services of regulated truckers or railroads. In July of 1948, the USDA asked the ICC to reconsider the case, developing in the meantime a plan to "obtain a reversal of the [ICC's] decision in the 'Harwood Case' ... to obtain the maximum exemption for agricultural commodities." Determined to "show that the exempt carrier provides a more flexible and adequate service to the farm community than does the regular carrier," the USDA decided to "line up witnesses" from farm groups, food processors, and the USDA's own economic divisions to contest the ICC's interpretation of washed salad as a manufactured commodity.¹²⁵ A year's worth of hearings ensued, in which the USDA's legal team argued that Congress had intended the exemption to apply to "not only those agricultural commodities which are marketable in

¹²⁴ Interstate Commerce Commission, Docket MC-107669, *Norman E. Harwood Contract Carrier Application*, 47 M.C.C. 597, Dec. 16, 1947.

¹²⁵ Donald C. Leavens, "The Investigation Concerning Exempted Agricultural Commodities," Aug. 17, 1948, and "Agenda for Exempted Agricultural Commodities Advisory Committee Meeting," Aug. 17, 1948, both in RG 136, Entry 42, Box 5, Folder 20.

their natural state but those on which labor has been performed or mechanical skill applied, without materially affecting the natural state of the articles."¹²⁶ During the hearings, the USDA indicated its intention to contest the issue before the Supreme Court if the ICC did not rule appropriately; under such pressure, the ICC overturned the *Harwood* decision in 1949, but opened up a new set of hearings to lay out a clear policy for interpreting the agricultural exemption clause. In 1951 the ICC issued its findings in a case known as *Determinations*, which declared that in all future petitions from motor carriers seeking certificates to transport agricultural commodities, the ICC would interpret a "manufactured" commodity as one which was no longer in its "natural state." *Determinations* set out a list of commodities that the ICC would consider non-manufactured, including, for instance, peeled apples and unshelled nuts; "manufactured" commodities included such goods as smoked, canned, or cooked chickens. Even *Determinations* opened up a window for the USDA to contest the ICC's interpretation of the exemption clause, however, since the ruling defined, for instance, pasteurized and vitamin-enriched milk as being in a "natural state," while milled grain was not. The upshot was that the ICC could not set down a firm and common-sense definition of "agricultural commodities (not including manufactured products thereof)" that would prevent the USDA from contesting a ruling that limited the exemption's coverage in any particular trucking firm's application for authority.¹²⁷

The fight over the agricultural exemption, however, was not fundamentally about whether a bag of washed salad or a bottle of pasteurized milk was manufactured or not, but was instead a roundabout attack on unionized transportation firms. Understanding this requires a brief review of the history of the International Brotherhood of Teamsters (IBT or Teamsters).¹²⁸ By the mid-1950s, this union was the single largest and most powerful in the United States, but it had first emerged in 1899 as a weak federation of strong craft-based locals of urban wagon deliverymen, mainly in the milk, bread, coal, and ice industries. As late as the mid-1930s the

¹²⁶ Charles B. Bowling (Chief, PMA Transportation Rates and Services Division, Marketing Facilities Branch) to All Parties of Our Record, "Determination of Exempted Agricultural Commodities," Aug. 10, 1949, RG 136, Entry 42, Box 5, Folder 20.

¹²⁷ Interstate Commerce Commission, Docket MC-C-968, *Determination of Exempted Agricultural Commodities*, 52 M.C.C. 511, Apr. 13, 1951; Sperling, *Agricultural Exemption*, 27-9.

¹²⁸ The official name of the union is International Brotherhood of Teamsters, Chauffeurs, and Warehousemen and Helpers of America.

Teamsters had shunned intercity truck drivers from membership; Daniel Tobin, the president of the IBT from 1907 to 1952, called over-the-road drivers "trash" unworthy of membership in his union in 1934.¹²⁹ Some locals, however, particularly the Trotskyite Local 574 led by Farrell Dobbs in Minneapolis, envisioned the future of Teamster power in the enrollment of long-haul truckers as well as local drivers in contractual agreements covering all drivers within broad regions, rather than single crafts within individual cities.¹³⁰ Dave Beck, a Seattle Teamsters organizer, took Dobbs's vision to an unprecedented level in 1935, when he initiated a "leapfrog" strategy of organizing over-the-road drivers in locals in major cities up and down the West Coast, then using that control over incoming and outgoing shipments to compel urban pickup, delivery, and dock workers to join the union or have their freight refused by organized drivers. Occasional use of clubs and bicycle chains, along with "sweetheart deals" in which the Teamsters convinced trucking company managers that they were better off with the American Federation of Labor-affiliated (and politically conservative) IBT rather than the Congress of Industrial Organizations, also helped bring reluctant workers into the union's folds. Once the local warehouse and delivery workers were signed up, a local's membership could swell to the point where leverage could then be applied, through the over-the-road drivers heading into other cities, to organize an entire city essentially from scratch. As Beck's most famous protégé, James R. Hoffa, would later explain the "leapfrog" strategy, "Once you have the road men, you can get the local cartage, and once you have the local cartage, you can get anyone you want."¹³¹ The efforts of Dobbs, Beck, and Hoffa led to the creation in 1937 and 1938 of the Western States Drivers Council and the Central States Drivers Council, both of which created multi-state, area-wide master labor contracts that standardized wages and working conditions across hundreds of trucking and warehouse firms at the same time.¹³²

¹²⁹ Ralph C. James and Estelle Dinerstein James, *Hoffa and the Teamsters: A Study of Union Power* (Princeton: Van Nostrand, 1965), 91.

¹³⁰ Farrell Dobbs, *Teamster Power* (New York: Monad, 1973); James and James, *Hoffa and the Teamsters*, 91-2; David Witwer, *Corruption and Reform in the Teamsters Union* (Urbana: University of Illinois Press, 2003), 65-6.

¹³¹ James and James, *Hoffa and the Teamsters*, quote on 100; Witwer, *Corruption and Reform*, 134-5; Donald Garnel, *The Rise of Teamster Power in the West* (Berkeley: University of California Press, 1972).

¹³² J. B. Gillingham, *The Teamsters Union on the West Coast* (Berkeley: Institute of Industrial Relations, University of California, 1956), 6, 54-64; Levinson, et al., *Collective Bargaining and Technological Change*, 20; Thaddeus Russell, *Out of the Jungle: Jimmy Hoffa and the Remaking of the American Working Class* (New York: Knopf, 2001), 58-72.

As important as the "leapfrog" strategy was, however, the Teamsters' success in the late 1930s stemmed largely from the cartelization effects of the 1935 Motor Carrier Act. Because the Act both limited competition from price-cutting entrants to the industry and required all contract and common carriers to publish their rates, each regulated trucking firm had a significant incentive to charge the same rates as every other firm. Thus, if one trucking firm drew up a contract with the Teamsters and raised its rates to accommodate increased wage demands, other firms had little incentive to resist unionization since they could just as easily increase their rates. Essentially, the MCA created what political scientists call a "free rider effect," allowing the Teamsters to monopolize the labor market in trucking as an unintended consequence of regulated carriers' efforts to monopolize the transportation market.¹³³ The Teamsters also benefited greatly from the establishment of a Trucking Commission under the National War Labor Board during World War II, which fostered a cooperative atmosphere between trucking firms and the union in the name of achieving uniform wage rates and working conditions among large trucking firms, seeking to prevent disruptive wildcat strikes by Teamster locals. The Trucking Commission, a tripartite board with one representative each for business, labor, and "the public," upheld the Western States and Central States area agreements as models of stable labor relations. When disputes arose, the Commission would require the protesting firm or union local to abide by the wage rates and labor provisions accepted by nearby firms participating in these regional agreements.¹³⁴ Throughout the war, the IBT consistently demanded few, if any, fundamental changes in the wage structures or conditions of employment in the trucking industry, accepting in return occasional cost-of-living wage increases and, more importantly, a state-granted monopoly on the trucking labor market.¹³⁵ Following the war, the

¹³³ Rothenberg, *Regulation, Organizations, and Politics*, 76-8.

¹³⁴ R. Thayne Robson, "The Trucking Industry," *Monthly Labor Review* 82 (May 1959): 548; "Trucking Commission History," n.d. (1945?), National War Labor Board Records, RG 202, Trucking Commission Records, Entry 305, Miscellaneous Records, 1942-45, National Archives II, College Park, MD, Box 2428, Folder 1; National War Labor Board Trucking Commission, In the Matter of Southeastern Area Employers' Negotiating Committee and International Brotherhood of Teamsters, Nov. 26, 1943, *ibid.*, Box 2423, Folder 1; Douglas Soutar to Lloyd K. Garrison, memorandum, "Office Practice," Sep. 25, 1943, RG 202, Entry 304, Outgoing Correspondence, Box 2421, Folder 5; Thomas E. Flynn (Acting President, IBT) to N. P. Feinsinger, Dec. 17, 1943, RG 202, Entry 303, General Correspondence, 1943-45, Box 2413, Folder 6; James Hill to Carroll B. Daugherty, Dec. 10, 1943, RG 202, Entry 304, Box 2421, Folder 2; American Trucking Associations, "Argument of the Trucking Industry to the War Labor Board against Change in the Present Wage Stabilization Program," Oct. 14, 1944, RG 202, Entry 305, Box 2428, Folder 2.

¹³⁵ Nathan P. Feinsinger, *Collective Bargaining in the Trucking Industry* (Philadelphia: University of Pennsylvania Press, 1949), 31.

Teamsters continued to expand their membership, using their dominance in the regulated freight trucking sector to refuse deliveries or pickups at the docks and warehouses of businesses that had not yet signed up with the Teamsters or another union affiliated with the American Federation of Labor. This was particularly the case after Dave Beck replaced Dan Tobin as president of the IBT in 1952. Beck, unlike Tobin, had no qualms about boosting the union's member rolls by organizing non-drivers; as one of Beck's colleagues told a reporter in 1953, "Dave will take anybody he can get his hands on, then he'll find some kind of justification for it. A 'teamster' to him is anybody who sleeps on a bed with movable casters."¹³⁶ By 1957, the Teamsters claimed the largest membership of any single union in the nation, with 1.5 million members, of which only half a million were truck drivers.¹³⁷ Those half-million truck drivers, employed primarily by large, regulated common-carrier trucking firms, earned very good wages due to the Teamsters' power. In 1957, the average annual pay of a union driver at a large firm was \$6,886, significantly better than the average annual earnings of \$4,242 for workers in manufacturing or the \$5,214 of workers in construction.¹³⁸

But the Teamsters had little luck organizing trucking firms hauling exempt agricultural commodities. There were several reasons for this. First, most exempt haulers were small businesses, most often owning only one or two trucks. As we shall explore in more detail in later chapters, drivers at such firms tended to maintain a sense of "independence" as small businessmen rather than wage workers, and so were hostile to labor unions. Furthermore, exempt trucking firms were generally dispersed in rural areas, forestalling the Teamsters from using the "leapfrog" organizing strategy that was so successful in urban contexts. Second, because exempt trucking firms did not have to file their rates with the ICC, the pressures to compete with other firms on price were much more intense than in the cartelized regulated freight industry; whereas regulated common carriers had little incentive to resist unionization,

¹³⁶ Joe Miller, "Dave Beck Comes out of the West," *Reporter*, Dec. 8, 1953, 21.

¹³⁷ "Who Are the Teamsters? From Groceries to Girders, They Haul Everything," *U.S. News and World Report*, Mar. 8, 1957, 134.

¹³⁸ Bureau of Labor Statistics, "Over-the-Road Truckdrivers," *Occupational Outlook Handbook* 1255, 4th Ed. (1959): 420; U.S. Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970, Part I* (Washington: GPO, 1976), 169, 173.

exempt carriers had every incentive to do so.¹³⁹ When the USDA and the ICC fought over what exactly should count as a "manufactured" agricultural commodity, the USDA was ultimately pushing to keep the Teamsters from organizing agricultural trucking firms and thereby driving up the cost of labor involved in transporting food from farms to consumers.

An example of this strategy was a lengthy debate, beginning in 1948, between the USDA and the ICC over a practice known as "trip-leasing."¹⁴⁰ This practice allowed exempt haulers, who did not have ICC authority to transport manufactured freight, to lease their equipment to a regulated carrier with the appropriate authority in order to obtain a "backhaul" (a load that would bring the trucker home and defray the cost of fuel). For example, an exempt trucker might haul Florida citrus products north to Atlanta, but upon arrival be unable to find a load of exempt commodities that would take him home, consequently facing an expensive return trip hauling an empty trailer ("deadheading"). By contracting with a larger carrier to haul a load of regulated freight back to the Florida home base, the trucker essentially gained temporary ICC authority by leasing his equipment out for the trip.¹⁴¹ The ICC saw such trip-leasing practices eroding its regulatory authority, since trip-leasing allowed unregulated truckers to gain operating authorities without directly filing with the ICC. The Teamsters sided with the ICC, since the union recognized that trip-leasing allowed regulated trucking firms to contract with exempt truckers ("gypsies," according to the union) as independent businessmen, thereby avoiding the need to pay union-scale wages or provide health or pension benefits.¹⁴² Teamster representatives testified before the ICC that trip-leasing amounted to sweated labor, forcing drivers to drive "from 16 to 76 hours without adequate rest," operating overloaded, unsafe trucks, with "earnings so low as to preclude proper maintenance of the equipment."¹⁴³ Some

¹³⁹ Mildred R. DeWolfe, *For-Hire Carriers Hauling Exempt Agricultural Commodities: Nature and Extent of Operations* (Washington: USDA, Agricultural Marketing Service, 1963); Walter Miklius, *Comparison of For-Hire Motor Carriers Operating under the Agricultural Exemption with Regulated Carriers* (Washington: USDA, Agricultural Marketing Service, 1966); Ralph Blumenthal, "Those Truckers Love Their Chains," *NYT*, Jun. 13, 1976, sec. 3, p. 4.

¹⁴⁰ Interstate Commerce Commission, "Lease and Interchange of Vehicles: Motor Carriers: Ex parte No. MC-43," *Federal Register*, Jan. 27, 1948, 369-72.

¹⁴¹ Interstate Commerce Commission, Ex Parte MC-43, *Lease and Interchange of Vehicles*, 52 M.C.C. 675, May 8, 1951, 714-15.

¹⁴² Frank Tobin to Daniel J. Tobin, Dec. 18, 1951, International Brotherhood of Teamsters Records, Wisconsin Historical Society, Madison, WI, Series V, Box 1, Folder 14.

¹⁴³ Interstate Commerce Commission, Ex Parte MC-43 (1951), 691-92.

regulated trucking firms also testified against trip-leasing, viewing the practice as placing downward pressure on freight rates. Most regulated firms, however, represented by the American Trucking Associations, argued that limits to trip-leasing would infringe on the rights of management to choose for themselves whether they would use leased or purchased equipment. As a consequence, the ICC issued a compromise ruling in 1951, allowing trip-leasing to continue, but requiring all trip-lease contracts to last for a minimum of 30 days.¹⁴⁴

The USDA responded to this ruling by taking the ICC to court. Under pressure from the Farm Bureau and the National Grange as well as trade associations of agricultural shippers, the USDA saw the 30-day requirement as a backhanded attack on the agricultural exemption clause of the Motor Carrier Act. This was because trip-leasing provided one of the only reliable ways for exempt truckers to stay in business without greatly increasing their rates for hauling agricultural goods, since without the backhauls available under trip-leasing exempt haulers would be forced to travel many "deadhead" miles without cost-defraying loads.¹⁴⁵ Along with the American Trucking Associations and a regulated trucking firm, the Secretary of Agriculture sued the ICC, arguing before the Supreme Court in 1952 that the commission had overstepped its regulatory authority by "tak[ing] away the advantages Congress intended to confer by the exemption from regulation granted carriers of agricultural products."¹⁴⁶ The Supreme Court, however, sided with the ICC in its decision of January 1953, finding that the commission had the authority to limit the "evils that had grown up in [trip-leasing] practice," particularly the "evil" of informal oral contracts for leases performed on the spot that potentially endangered the interests of both the lessors and the lessees.¹⁴⁷ Undaunted, the Department of Agriculture went to Congress in the spring of 1953, requesting legislation to prohibit the ICC from requiring trip-leases to last at least 30 days. After hearing testimony from farm organizations who protested that the 30-day requirement would put the vast majority of exempt haulers out of business, Congress

¹⁴⁴ Ibid., 677.

¹⁴⁵ Guy Black, "Agricultural Interest in the Regulation of Truck Transportation," *Journal of Farm Economics* 37 (Aug 1955): 439-51.

¹⁴⁶ U. S. Supreme Court Reports, 97 Lawyers Ed., *American Trucking Associations, Eastern Motor Express and Secretary of Agriculture vs. ICC*, 344 U.S. 298 (1953), 338.

¹⁴⁷ Ibid., 352.

overwhelmingly passed the bill.¹⁴⁸ The ICC refused to cave in its efforts to tighten its grip on "gypsy" truckers, however, and amended the trip-leasing order in 1955 to allow trip-leasing by agricultural haulers, but only for a return trip to a point from which the original exempt haul had started. The USDA once again appealed to Congress to pass legislation to prevent the ICC from placing any restrictions on trip-leasing by exempt truckers; the final result in August of 1956 was the passage of Public Law 957, which clearly and firmly exempted agricultural haulers from the 30-day limitation.¹⁴⁹ Nearly a decade after the ICC had first attempted to clamp down on trip-leasing exempt haulers, the USDA had used every judicial, administrative, and legislative weapon at its command to prevent any restrictions on the exemption.

What the ICC interpreted as the chaotic nature of unregulated trucking was viewed by the USDA as essential for allowing not only farmers, but all industries engaged in agribusiness to keep their transportation costs low. Agricultural economist Ralph Dewey summed up the Department's attitude toward exempt trucking in 1954: "The truly competitive, small-scale carriers should be regulated only as to abuses that cannot be corrected through free competition," meaning that agricultural truckers should be subject only to safety regulations, with all other issues dictated by the operations of the free market.¹⁵⁰ But in the later 1950s, the USDA pushed an even more ambitious deregulatory agenda, seeking to expand the agricultural exemption to cover processed foods as well as raw agricultural commodities. As we shall see in more detail in Chapter 4, the efforts of the Department led in 1956 to a Supreme Court case that defined frozen foods as exempt agricultural commodities, with the implication that nearly all processed foods would fall under the exemption. In 1958, the ICC, the American Trucking Associations, the Teamsters, and the nation's railroads asked Congress to pass legislation to prevent the agricultural exemption from being applied to all foodstuffs. As ICC Commissioner

¹⁴⁸ John H. Davis to Charles E. Jackson, Apr. 1, 1954, RG 136, Entry 18, Box 2, Folder 3; True D. Morse to Lee J. Quasey, Apr. 6, 1954, *ibid.*, Box 3, Folder 5; House Committee on Interstate and Foreign Commerce, *Trip Leasing (Interstate Commerce Act), Hearings*, 83d. Cong., 1st sess., Apr. 21-24, 30, May 7, 1953; Senate Committee on Interstate and Foreign Commerce, *Amendment to Interstate Commerce Act (Trip Leasing), Part 1, Hearings*, 83d. Cong., 1st sess., Jul. 8-9, 1953, esp. 7-11, 52.

¹⁴⁹ Senate Committee on Interstate and Foreign Commerce, *Amending Interstate Commerce Act with Respect to Trip Leasing*, 84th Cong., 1st sess., 1955, S. Rept. 1271, 3-4; House Committee on Interstate and Foreign Commerce, *Trip Leasing (Interstate Commerce Act), Hearings*, 84th Cong., 2nd sess., May 16, 17, 21, 1956; Sperling, *Agricultural Exemption*, 14.

¹⁵⁰ Ralph L. Dewey, "Regulations and Policies," in USDA, *Yearbook of Agriculture, 1954: Marketing* (Washington: GPO, 1954), 109.

Howard G. Freas testified before the House Interstate Commerce Committee, the USDA's continuing efforts to expand the agricultural exemption threatened the stability of the transportation industry. The exemption that Congress had originally intended to allow farmers to truck their products to market with minimal oversight was becoming, according to Freas, a free pass for agribusinesses to ship processed foods via "gypsy" truckers who would drive regulated carriers out of business.¹⁵¹ The American Trucking Associations agreed, informing William Crow at the USDA that the Department's transportation work, which had previously served only farmers, was now "serving processors and manufacturers."¹⁵² The USDA, however, informed Congress that "these arguments are unfounded.... There can be no question but that efficiencies and economies which are injected into the marketing process at any point affect producers [i.e., farmers]."¹⁵³ Although admitting that food processors were among the industries benefiting most from the agricultural exemption, the USDA argued that an efficient marketing machine that kept the cost of distributing food to consumers low was also in the interest of farmers. The Farm Bureau agreed, stating more explicitly that the exemption prevented unions from instituting "the same featherbedding and make-work practices that add costs to rail and truck common carrier operations," practices the Farm Bureau saw driving up the price of food for consumers while depressing farm prices.¹⁵⁴ In this particular instance, as we shall see in Chapter 4, the USDA and the Farm Bureau lost their case when Congress, under pressure from certain frozen food processing firms as well as regulated truckers and railroads, opted to consider frozen foods as "manufactured products" and therefore not exempt from ICC regulation.

Nonetheless, the USDA's efforts to apply the agricultural exemption to for-hire truckers as well as farmers hauling their own products were largely successful in the postwar era. As a result, the chaos that had characterized the trucking industry in the 1920s and early 1930s

¹⁵¹ House Committee on Interstate and Foreign Commerce, *Interstate Commerce Act: Agricultural Exemptions, Hearings*, 85th Cong., 2d sess., Apr. 23-25, 1958, 14. See also Owen Clarke, "The Motor Carrier Act," *Power Wagon* (Sep. 1957): 14.

¹⁵² John V. Lawrence (Managing Director, American Trucking Associations) to William C. Crow, Jan. 29, 1957, RG 136, Entry 42, Box 2, Folder 15.

¹⁵³ House Committee on Interstate and Foreign Commerce, *Interstate Commerce Act: Agricultural Exemptions, Hearings*, 24.

¹⁵⁴ *Ibid.*, 154.

continued to apply to the agricultural trucking industry in the post-World War II era. It is difficult to know the exact extent of exempt hauling operations, since statistics on transportation were primarily a byproduct of government regulatory activities that by definition did not extend to exempt truckers, but in 1961 the ICC took a stab, estimating that 37,515 exempt trucking companies were in operation. If this estimate was correct, there were about twice as many exempt as regulated trucking companies at the time, although the regulated firms owned four times as many trucks.¹⁵⁵ But the importance of the exemption can be measured in another sense; namely the repeated efforts of the ICC and the American Trucking Associations in the 1960s to crack down on what they considered "gypsy" truckers. For instance, in 1965 the American Trucking Associations initiated a public-relations campaign meant to arouse opposition to the "gray area" of "illegal truck transportation" by truckers who passed themselves off as exempt farm haulers in order to evade ICC regulation. According to Forney Rankin, the ATA's farm relations specialist, approximately 25 percent of regulated freight was moving in unregulated channels, as truckers claiming to haul, say, fresh vegetables, were in fact hauling trailers full of steel covered with sawdust, ice, and a single crate of lettuce. Such illicit practices cost regulated truckers a half billion dollars a year, claimed Rankin, threatening the stability of the entire industry.¹⁵⁶

This "gray area" became particularly problematic in 1966 following a Supreme Court decision upholding the right of agricultural cooperatives to haul not only farm products but also general freight under the exemption. Farmer cooperatives had established trucking fleets as early as the 1920s to provide farmer members with non-profit transportation services to haul their perishable products to market and return with fertilizer, farm machinery, feed, and seeds. To encourage this practice, Congress had explicitly included cooperatives in the agricultural

¹⁵⁵ Interstate Commerce Commission, *75th Annual Report of the Interstate Commerce Commission* (Washington: GPO, 1961), 136. The lack of data on exempt agricultural haulers was a constant thorn in the side of USDA economists whose job it was to support the Department's efforts to keep the exemption in place from 1935 to the late 1970s; see Committee on Government Statistics to Secretary Wallace, "A Suggested Plan for Securing More Adequate Data on Movements of Farm Products by Truck," n.d. (1935), John D. Black Papers, Box 6, Folder 2; E. L. Peterson (Administrator, AMS) to Quentin M. West, "Marketing Related Research," Feb. 21, 1975, RG 136, Entry 2, Box 2.

¹⁵⁶ Forney A. Rankin, "Illegal Truck Transportation: The Gray Area," presentation before Delta Nu Alpha Transportation Fraternity, Spokane, WA, Jan. 18, 1965, Pamphlet Collection, American Truck Historical Society, Kansas City, MO, 2.

exemption clause of the 1935 Motor Carrier Act.¹⁵⁷ In the early 1960s, the Northwest Agricultural Cooperative in Idaho began taking advantage of the exemption to transport regulated freight items such as air conditioners, furnaces, and water heaters for its members as well as farm products. The ICC ordered the cooperative to cease and desist from hauling manufactured goods, leading to a lawsuit that ended up in the Supreme Court in 1966, in which the Court determined that Northwest's trucking operation was primarily agricultural in character and so should remain exempt from ICC regulation.¹⁵⁸ The ICC turned to Congress for help, seeing the ruling as an inroad for agricultural cooperatives to establish themselves as full-fledged unregulated trucking firms competing directly with the regulated carriers who provided the "fundamental basis" of "this Nation's transportation system."¹⁵⁹ The American Trucking Associations likewise saw the Supreme Court's action as a great threat. James F. Pinkney, the chief counsel for the ATA, testified before the Senate Commerce Committee that the cooperative exemption created economic disorder and unruly competition; in short, a veritable "cancerous growth" on the body politic requiring "rather drastic surgery."¹⁶⁰ Farm organizations, including the Farmers Union and the Farm Bureau as well as representatives of farmer cooperatives, opposed the ICC and the ATA's attempts to rein in the exemption. Secretary of Agriculture Orville Freeman supported the farm organizations, arguing that "to the extent that the motor carrier operations of the cooperatives are efficient, the interests of the marketing system and of consumers are served," once again promoting the flexibility of unregulated trucking as a direct attack on the farm problem.¹⁶¹ Ultimately Congress settled on a compromise solution, allowing agricultural cooperatives to haul any freight they wished as long as such non-farm freight did not exceed 15 percent of the operation's annual tonnage.¹⁶² The "gray area" despised by regulated truckers continued in full force.

¹⁵⁷ H. S. Yohe, *Operating a Cooperative Motor Truck Route* (Washington: USDA, 1919); William C. Bowser, Jr., *Motortruck Operations of Farmer Cooperatives* (Washington: USDA, Farmer Cooperative Service, 1963); T. H. Camp, *Motortruck Operating Costs of Farmer Cooperatives* (Washington: USDA, Farmer Cooperative Service, 1964).

¹⁵⁸ *Northwest Agricultural Cooperative Association v. Interstate Commerce Commission*, 350 F. 2d 252 (1965), cert. denied 382 U.S. 1011 (1966).

¹⁵⁹ Senate Committee on Commerce, Subcommittee on Surface Transportation, *Agricultural Cooperative Transportation Exemption, Hearings*, 90th Cong., 1st sess., Jul. 24-26, 1967, 15.

¹⁶⁰ *Ibid.*, 55, 53.

¹⁶¹ *Ibid.*, 152.

¹⁶² *Statutes at Large* 82 (1968): 448-9.

Conclusion

By the early 1970s, the agricultural exemption effectively created an entire sector of the long-haul trucking industry that was free from regulatory oversight by the ICC. The USDA, supported by various farm organizations, had repeatedly convinced Congress and the Supreme Court to expand the exemption's applicability, even in the postwar era when large for-hire rigs traveling on interstate highways had essentially replaced the small, farmer- or cooperative-owned trucks that Congress had in mind when it created the exemption in 1935. For promoters of anti-statist approaches to national transportation policy, the agricultural exemption offered a model of free markets operating in the public interest. Richard N. Farmer, a professor of business administration at the University of California-Los Angeles, for instance, argued in 1964 that the exemption reduced shipping costs, benefiting both producers and consumers of agricultural products. Furthermore, because unregulated truckers could serve any geographical area without first applying to the ICC for the operating authority to do so, exempt carriers were able to adjust rapidly to geographical shifts in production and constant swings in supply and demand inherent to the agricultural economy. As Farmer put it, "To regulate for the sake of regulation, or to tidy up what seems to be a confusing, chaotic free market seems unsound."¹⁶³ Richard Farmer's views would take hold in policymaking circles as well as among "independent" truck drivers in the mid-1970s, when, as we shall see below, a concerted push for deregulation of the entire trucking industry led to the Motor Carrier Act of 1980.

The USDA's anti-regulatory approach to trucking policy was not, however, primarily a product of a free-market ideology. Instead, the Department's efforts to keep trucking "flexible" in the years following World War II were deeply embedded in its attempts to transform the farm problem into an industrial problem. As we shall explore in the next three chapters, the USDA's promotion of trucking encouraged the development of a geographically decentralized but economically centralized food marketing machine that transformed raw agricultural

¹⁶³ Richard N. Farmer, "The Case for Unregulated Truck Transportation," *Journal of Farm Economics* 46 (May 1964): 398-409, quote on 408; Richard N. Farmer to the Editor, *Forbes*, Dec. 15, 1964, 6, 52.

commodities into foods for American consumers while simultaneously insulating the Department from attacks on its statist efforts to raise farm incomes through price supports. In 1972, for example, Secretary of Agriculture Earl Butz defended his Department's continued commitment to administering price supports despite a recent spike in consumer food prices, stating: "The rising costs that are really responsible for rising food prices are in the 62 cents of each food dollar that go to the middlemen—they are the truckers, marketeers, packagers, and retailers who operate between the American farmer and the American consumer."¹⁶⁴ The statement held great irony. Since the passage of the 1946 Research and Marketing Act, and to an even greater extent after Ezra Taft Benson's creation of the Agricultural Marketing Service in 1953, the USDA had consistently pushed the politics of food pricing into the hands of those same "truckers, marketeers, packagers, and retailers" who were now held up as the perpetrators of high food prices. As the following case studies of the business and politics of milk, beef, and frozen food marketing show, this was exactly the result agricultural policymakers had intended.

¹⁶⁴ Earl L. Butz, "The Farmer as the Good Guy," *NYT*, Apr. 15, 1972, 31.

Chapter 2: From the Milk Man to the Milk Hauler

The movement of milk from farm to consumer was one of the most hotly contested political acts of the mid-twentieth century. Truck drivers—both those who hauled milk from farms to dairies and those who delivered milk to urban consumers' homes—became implicated in the politics of the price of milk beginning in the 1920s. By the early 1930s, both types of drivers would be blamed by agricultural policymakers for bringing disorder to an economic system that had seen relative peace in the previous decade. Circumstances during World War II temporarily quieted the New Deal's political struggles over the price of milk. Soon after the war, however, the so-called "milk problem" once again pressed upon agricultural policymakers. Consumers, milkmen organized in the Teamsters union, and certain dairy farmers made insistent but competing demands for a "fair price" for milk. Ultimately, the trucks that helped to set this "milk problem" into motion would serve to halt it in the 1950s and 1960s, as the development of new technologies for distributing and marketing milk replaced the city milkman—once the heart of the milk distribution system—with the rural milk hauler. These technological changes were orchestrated and encouraged by state and federal agricultural experts who, by the mid-1970s, successfully subdued the contentious politics surrounding the price of milk.

The New Deal and the "Milk Problem"

For much of the twentieth century, and especially during the Great Depression, few issues caused more bitter fights in local and state politics than the price of milk. As a U.S. Circuit Court judge explained during a particularly acrimonious legal battle in 1941, "The city-dweller or poet who regards the cow as a symbol of bucolic serenity is indeed naïve. From the udders of that placid animal flows a bland liquid, indispensable to human health, but often provoking as much human strife and nastiness as strong alcoholic beverages."¹ Urban consumers, who had

¹ Jerome Frank, Opinion in *Queensboro Farm Products vs. Wickard*, 137 F. 2d 969, (2d Cir. 1943), 974, quoted in Thomas B. Gilmore (Associated Milk Dealers of Chicago), Address before Mid States-East Coast Dairy Conference of

been taught by Progressive reformers that pure milk was necessary for good health, demanded year-round, high quality milk at reasonable prices. Milk dealers offered to meet these needs by pasteurizing, bottling, and delivering milk for a profit. To do so, however, dealers had to pay premium prices to farmers willing to make major investments in disease-free cattle, quality feed, and clean barns. Furthermore, the extreme perishability of milk, especially in the days before most consumers owned refrigerators, required daily delivery services by milkmen whose craft unions were among the most successful in the country in gaining wage and benefit concessions. As long as these various interests felt they were paying or being paid a fair price for quality milk, as generally was the case during the 1920s, milk did not cause particularly bitter political disputes.²

Unfortunately, cows have never been particularly willing to cooperate with the rhythms of industrial society, tending to produce far more milk during the spring—when they eat the juiciest grass and would otherwise be feeding their calves. Milk dealers trying to supply city consumers with year-round milk consequently had to pay farmers to overproduce in the spring in order to get enough later in the year. This might have been fine, since surplus milk can always be turned into European society's oldest convenience foods—cheese and butter—except for the fact that farmers who lived farther away from cities already produced milk for cheese and butter. These more distant dairy farmers did not need the expensive equipment required to meet city health inspectors' standards. Nonetheless they had to accept a lower price for their milk than city milk producers, and consequently despised the spring surpluses of city farmers that drove down cheese prices. Dairymen located close to cities likewise despised more distant farmers for attempting to sell their surplus lower-grade milk to city dwellers at cut-rate prices. Furthermore, some farmers located somewhere between cheese and fluid milk dairymen would attempt to get the highest price possible for their milk by selling either to cheese factories or to city milk dealers, depending on the season. Milk dealers, for their part, would often rely on this market

International Brotherhood of Teamsters, Chicago, IL, Jan. 27, 1959, International Brotherhood of Teamsters, Local 695 (Madison, WI) Records, Wisconsin Historical Society, Madison, WI (hereafter IBT 695 Records), Box 4, Folder 11.

² Daniel R. Block, "The Development of Regional Institutions in Agriculture: The Chicago Milk Marketing Order," (Ph.D. diss., University of California–Los Angeles, 1997), 1-199. For a concise summary of the milk problem, see "Milk Industry: Its Hows and Whys," *Business Week* (hereafter *BW*), Jan. 21, 1956, 172-8.

instability to force down the price they had to pay the rest of the year to nearby farmers.³ The cow's refusal to produce evenly throughout the year led to constant power struggles among various categories of farmers and urban milk dealers.⁴

The geographical divisiveness of milk production in the early twentieth century corresponded with the "central place theory" of Johan Heinrich von Thünen, first expounded in 1826 in *The Isolated State*.⁵ Von Thünen described an imaginary city surrounded by farmland. What farmers decided to raise at any particular location, predicted von Thünen, would depend on two variables: the price city consumers were willing to pay for a particular food and the cost of transporting those foods to market. Farmers located close to a city would profit most by producing fruits, vegetables, and fresh milk, since consumers were willing to pay a premium for these highly perishable foods, thereby offsetting the high costs of daily transportation. Farther away from the city, where land rents were lower, farmers could make better profits producing grains, meat, and manufactured dairy products like cheese and butter. Although they brought lower prices in the market, these less perishable commodities had sufficiently lower transportation costs to make up the difference. Von Thünen's abstract model has been criticized by geographers and historians for its lack of applicability to real-world situations where cities are not perfectly isolated in the center of a featureless plain. Nonetheless, von Thünen's rings were remarkably accurate in predicting the geographical outlines of city "milksheds" that developed in the United States in the late 19th and early 20th centuries. As a general rule, dairy

³ As we shall see, when trucks and refrigeration came into general use for hauling milk in the mid-1920s and 1930s, this already unstable marketing situation became even more unstable, because even the "outer ring" farmers could potentially ship relatively high quality milk into distant cities.

⁴ The seasonality of milk production had no easy solution. In wheat marketing, as William Cronon has described, economic stability could be achieved through futures trading that turned seasonal fluctuations into opportunities for profit (William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991), 97-147). Unlike wheat, however, fresh milk cannot be safely stored for months at a time, making futures trading impossible. Throughout the twentieth century, various attempts were made by food technologists to make fluid milk storable; if it could have been concentrated and/or frozen, the problem of seasonality might have been eliminated and profits and prices could have been stabilized. "Plan to Solve Milk Problem," *Science News Letter*, Apr. 3, 1943, 218. Unfortunately, neither milk nor consumers were particularly willing to participate in these projects—the flavor and texture of fluid milk have been so strongly culturally constructed that no company has so far been able to convince consumers that condensed or frozen milk is fresh or tasty enough to pass for the real thing. R. Anderson, "Frozen Milk: Will It Sell?," *Farm Journal*, Mar. 1955, 104; J. Arthur Lewis, "Concentrated Milk—A Progress Report," *Quick Frozen Foods* (Oct. 1951): 52-3; "What Has Happened to Concentrated Milk?—Not Much, Survey Shows," *Milk Dealer* (Sep. 1953): 87; "Whole Milk in Cans," *Fortune*, Oct. 1952, 87; "The Ups and Downs of Concentrated Milk," *Fortune*, Sep. 1951, 164.

⁵ Johan Heinrich von Thünen, *Von Thünen's Isolated State*, trans. Carla M. Wartenberg, ed. Peter Hall (Oxford: Pergamon Press, 1966 [1826]).

farmers close to cities like Chicago and New York proved more willing to invest in the equipment and quality herds necessary for fluid milk production, while farmers deeper in the hinterlands of northern Wisconsin and upstate New York focused on less intensive butter and cheese production.⁶

Events of the early 1930s turned these related issues of seasonal surpluses and geographical tensions into a dramatic issue of political economy in the New Deal—the so-called "milk problem." Sustained droughts ravaged pastures in the Midwest and Northeast, reducing the average milk production per cow by nine percent between 1929 and 1933. In order to regain their production levels, dairy farmers increased their herd sizes—primarily by choosing not to cull old or low-yielding cows. When pastures began to improve, farmers consequently faced unprecedented surpluses. Meanwhile, consumers hit hard by the Depression cut back their consumption of dairy products—especially cheese and butter, which lower-income Americans tended not to see as staple foods (especially with the availability of lower cost oleomargarine). Slack demand and oversupply drove down the prices paid to farmers for their milk by 51 percent between 1929 and January 1933. Cheese and butter farmers saw their incomes drop especially rapidly, with the wholesale price for butterfat dropping by 58 percent in the same period.⁷ In early 1933, with the combination of low prices and large surpluses raising the stakes of competition in dairying, the longstanding division between inner-ring and outer-ring farmers set the stage for desperate action.

Impoverished farmers began to violently demand higher prices for their milk in 1933 and 1934. Farmers in New York, Illinois, Michigan and elsewhere withheld their milk from market, often dramatically dumping it on the road, in efforts to drive up the price dealers paid for their

⁶ Cronon, *Nature's Metropolis*, 46-54; Daniel Block and E. Melanie DuPuis, "Making the Country Work for the City: Von Thünen's Ideas in Geography, Agricultural Economics and the Sociology of Agriculture," *American Journal of Economics and Sociology* 60 (Jan. 2001): 79-98; Eric E. Lampard, *The Rise of the Dairy Industry in Wisconsin: A Study in Agricultural Change, 1820-1920* (Madison: State Historical Society of Wisconsin, 1963); Loyal Durand, Jr., "The Migration of Cheese Manufacture in the United States," *Annals of the Association of American Geographers* 42 (Dec. 1952): 263-82; Gordon R. Lewthwaite, "Wisconsin Cheese and Farm Type: A Locational Hypothesis," *Economic Geography* 40 (Apr. 1964): 95-112; George Max Beal and Henry H. Bakken, *Fluid Milk Marketing* (Madison: Mimir Publishers, 1956), 35-62.

⁷ John D. Black, *The Dairy Industry and the AAA* (Washington: Brookings Institution, 1935), 60-82, 463.

milk.⁸ One of the first and most spirited of these episodes occurred in Wisconsin in February 1933, when a group of several thousand farmers organized under the banner of the Wisconsin Cooperative Milk Pool.⁹ The leader of the Milk Pool was Walter M. Singler, a "firebrand" who traveled around the state whipping farmers' rallies into a frenzy with his red blazer, two-gallon cowboy hat, goatee, spats, and tirades against the Milwaukee and Chicago "milk trusts."¹⁰ Allied with the politics of Milo Reno and his Farm Holiday Association, Singler argued that the only way to raise farmers' incomes was for farmers to withhold their products from market until food processors grew desperate enough to pay them a "fair price plus profit." On February 15, 1933, Singler told his followers that a statewide strike would be necessary to achieve this. Singler first proposed a five-day "peaceful strike," but his lieutenant in the Milk Pool, A. H. Christman, recommended "literally knock[ing milk dealers] over the head with a club."¹¹ Within days, Milwaukee area farmers took up Christman's call to arms, withholding their milk from market and "swarming over the roads of Outagamie county [north of Milwaukee], dumping truckload after truckload of milk and roughing up [truck] drivers."¹² Farmers blocked roads with heavy timbers, threatening milk factories with dynamite and diesel fuel in their storage vats. Sheriffs hastily deputized locals to escort milk trucks to town with shotguns and tear gas to prevent a "milk famine" in Milwaukee.¹³

The violence of the Milk Pool strike dramatized one of the key conflicts at the heart of the "milk problem"—the division between outer-ring cheese farmers and inner-ring fluid milk farmers (see **Map 2.1**). The inner-ring farmers who provided milk for cities like Milwaukee and Chicago were already organized into two strong cooperative associations, the Milwaukee

⁸ L. H. Robbins, "The Issues in the Milk Strike: Clash of Dealer and Producer," *New York Times* (hereafter *NYT*), Aug. 13, 1933, 2; "Chicago Dairymen Strike against Price Cuts," *Newsweek*, Jan. 13, 1934, 10; E. Wilson, "Milk Strike," *New Republic*, Sep. 13, 1933, 122-5.

⁹ A. William Hoglund, "Wisconsin Dairy Farmers on Strike," *Agricultural History* 35 (Jan. 1961): 24-34.

¹⁰ "Farm Strike up to Singler," *Milwaukee Journal*, Feb. 7, 1933, 6; Lewis C. French, "Singler, Unknown a Year Ago, Is 'Spark' of Farm Revolt," *Milwaukee Journal*, Feb. 19, 1933, 3.

¹¹ "Pool Leaders Vote State Milk Strike," *Milwaukee Journal*, Feb. 8, 1933, 1; "Milk Strike Moves Slowly on First Day," *Milwaukee Journal*, Feb. 15, 1933, 1, 2.

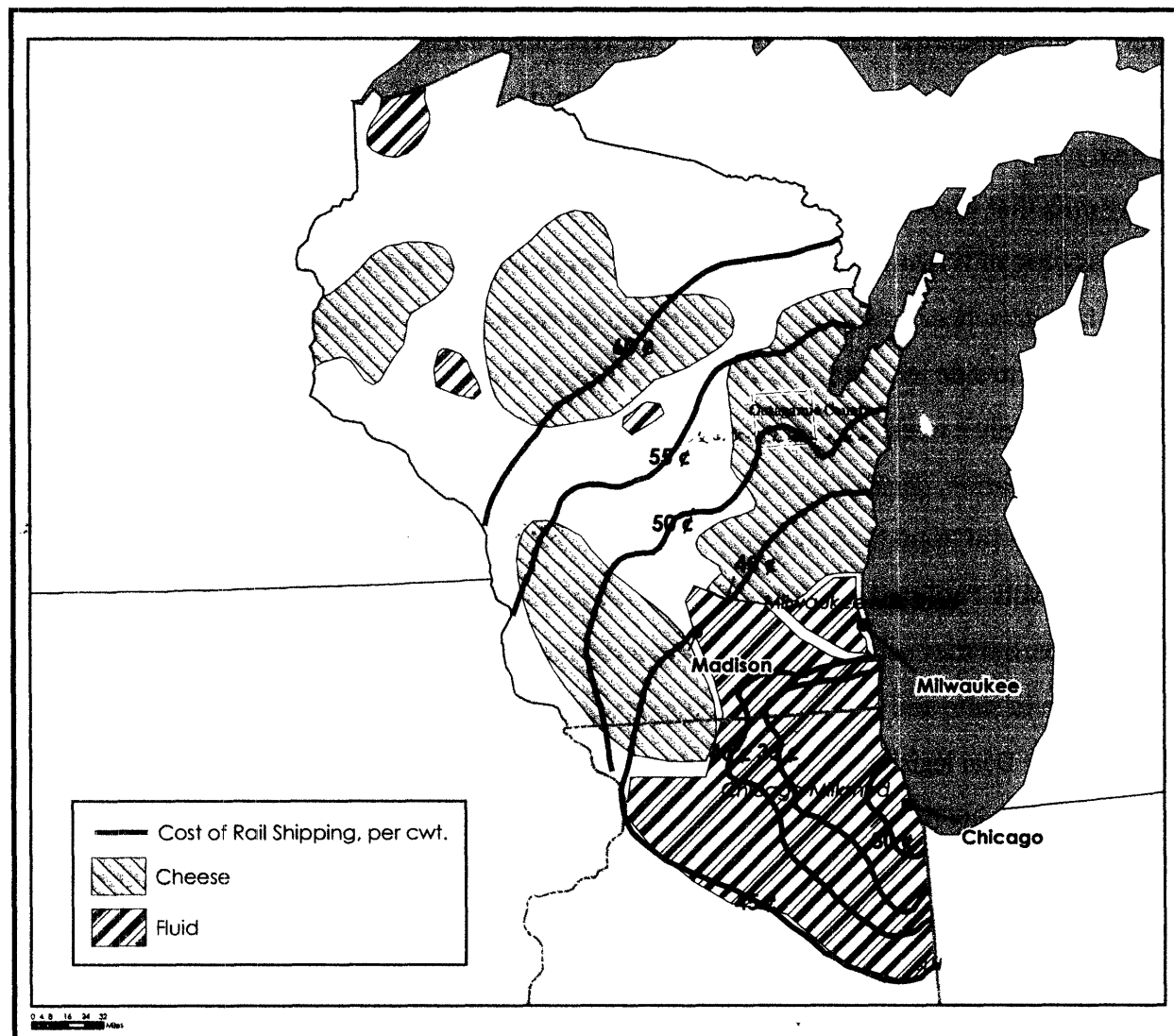
¹² "First Shot Fired, Milk Spilled in Strike," *Milwaukee Journal*, Feb. 17, 1933, 1, 3; "Strike Growing, Milk Poured on Roads," *Milwaukee Journal*, Feb. 18, 1933, 1, 3.

¹³ "Milk Strikers Surround Milwaukee," *Milwaukee Journal*, Feb. 20, 1933, 1, 2; "Waukesha Drops Deputies; Roads Left to Milk Strikers," *Milwaukee Journal*, Feb. 21, 1933, 1, 2; Dr. Pilgrim, "Health Department Activities during the Milk Strike," 1933, Agricultural Marketing Service Records, RG 136, Milk Marketing and Planning Studies or Surveys, Entry 27, National Archives II, College Park, MD (hereafter cited as RG 136, Entry 26), Box 14, Folder 3.

Cooperative Milk Producers and the Pure Milk Association, which had bargained satisfactory price minimums with city dealers and thus held no animus towards the "milk trust." The inner-ring farmers who belonged to these two associations tended to be larger farmers who were doing relatively well and "despised" farmers who were "[Milk] Pool-minded."¹⁴ One dairy farmer, whose father helped set up an important Milwaukee dairy plant, remembered in an oral history that members of the Milwaukee Milk Producers were "pretty well satisfied" with milk prices while Milk Pool members tended to be "the farmers that didn't run a good operation."¹⁵ In less subtle words, there was a recognized class division between the well-off (though rarely wealthy) city milk farmers and the sometimes desperately poor upstate cheese milk farmers.

¹⁴ Mr. Blatz to Rodger Crabtree, "Report on Trip to South Milwaukee Farmers," Apr. 13, 1934, RG 136, Entry 27, Box 46, Folder 6. See also *Around 15,000 Dairy Farmers Welcome You into Chicagoland's Biggest Dairy Cooperative*, 1956, Pure Milk Association Records, Wisconsin Historical Society, Madison, WI, Box 1, Folder 1; Walter E. Winn, *History of Pure Milk Association*, 1966, *ibid.*, Box 1, Folder 1. A similar cooperative spirit between inner-ring farmers and large milk dealers existed in Madison. M. J. Heisman (C.P.A., State of Wisconsin Department of Agriculture and Markets) to Board of Directors, Madison Cooperative Milk Producers, Nov. 30, 1932, Associated Milk Producers Records, Wisconsin Historical Society, Madison, WI (hereafter cited as AMPI Records), Box 1, Folder 10; H. E. Thew to H. A. Haring, Jul. 17, 1928, *ibid.*, Box 1, Folder 12; Madison Milk Producers Cooperative Dairy, Press release, Dec. 9, 1967, *ibid.*, Box 2, Folder 10.

¹⁵ Percy S. Hardiman, Interview by Dale Trelevan, Aug. 3, 1976, Percy Hardiman Oral History, Wisconsin Historical Society, Madison, WI, Tape 3, Side 1.



Map 2.1: Wisconsin and Illinois Milksheds, 1932

The cost of shipping milk by railroad created a radial geography of milk production. Fluid milk producers located close to metropolitan centers, while cheese and butter producers located in the "outer rings." Sources: Wisconsin Cartographer's Guild, *Wisconsin's Past and Present*, 48; Ross, *Marketing of Milk*, 470.

The only immediate result of the Milk Pool strike was to highlight this division. The Milwaukee Cooperative Milk Producers, who controlled the flow of milk to the city, refused to join the strike, calling it a "farce" and arguing that it would raise prices to consumers and lead to

lower quality standards.¹⁶ As they pointed out, Wisconsin already had a law on the books—the Caldwell Act of February 1933—that established a minimum price of \$1.60 per hundredweight for fluid milk. Walter Singler's strikers were demanding \$1.40 per hundredweight for lower quality milk that would otherwise be used for cheese production.¹⁷ The Public Health Commissioner of Wisconsin, concerned that city milk supplies would be contaminated by the milk of farmers whose cows had not been tested for tuberculosis, advised governor Albert Schmedeman to side with the Milk Producers. The governor agreed, convincing Singler to call off the strike only a week after it began.¹⁸ Singler, after conferring with Milo Reno of the Farm Holiday Association, decided to halt the strike until May 1933 "to give the incoming national administration [of Franklin Roosevelt] a fair chance to pass agricultural relief measures."¹⁹

The Milk Pool strike and the other strikes of the early 1930s had little immediate consequence, but they set the stage for federal regulation of the nation's milksheds. This intervention in state and local milk economies was justified by the passage of one of the first pieces of New Deal legislation, the Agricultural Adjustment Act of 1933. Intended primarily as a means of stabilizing the nation's severely depressed cotton, tobacco, and grain economies through the use of production controls, the original Agricultural Adjustment Act contained only limited provisions for regulating the marketing of dairy products. Mordecai Ezekiel was particularly convinced that milk marketing controls did not belong in the Agricultural Adjustment Administration (AAA) program. An economist who played a key role in constructing the AAA, Ezekiel believed that production controls rather than marketing regulations were the key to increasing farm incomes. Production controls would not effectively raise farmers' milk prices, Ezekiel believed, because demand for dairy products was elastic—if milk prices were forced up by reduced supplies, consumers would simply choose to buy less dairy products.²⁰

¹⁶ Advertisement by Milwaukee Co-operative Milk Producers Association, "Milk Strike a Farce," *Milwaukee Journal*, Feb. 19, 1933, 11; Hardiman interview, Tape 3, Side 1.

¹⁷ "8-Cent Milk to Be Enforced," *Milwaukee Journal*, Feb. 6, 1933, Sec. 2, p. 1; "Deadline Near on Milk Order," *Milwaukee Journal*, Feb. 7, 1933, 3; "State to Study Singler Deals," *Milwaukee Journal*, Feb. 21, 1933, 1, 2.

¹⁸ "Singler Agrees to Stop Strike, Report; Milk Trucking Stops; Railroads Supply City," *Milwaukee Journal*, Feb. 22, 1933, 1-3.

¹⁹ Lewis C. French, "Roads Clear of Pickets as Strike Ends," *Milwaukee Journal*, Feb. 23, 1933, 1, 3.

²⁰ Mordecai Ezekiel to John D. Black, Jan. 15, 1935, John D. Black Papers, Wisconsin Historical Society, Madison, WI, Box 6, Folder 2. See also Richard S. Kirkendall, *Social Scientists and Farm Politics in the Age of Roosevelt* (Columbia: University of Missouri Press, 1966), 63-9; Theda Skocpol and Kenneth Finegold, "State Capacity and Economic Intervention in the Early New Deal," *Political Science Quarterly* 97 (Summer 1982): 255-78. On the tension within

Organized dairy farmers and city milk dealers in Chicago, however, saw the passage of the Agricultural Adjustment Act as an opportunity to prevent a recurrence of the Milk Pool strike. One day after President Roosevelt signed the Act, representatives of the Pure Milk Association and their allies, the large milk dealers of Chicago, petitioned Secretary of Agriculture Henry A. Wallace to establish a system of regulating milk prices in the Chicago milkshed.²¹ Wallace responded by establishing a Dairy Section of the AAA, headed by Wharton economist Clyde L. King, and calling a series of regional hearings to negotiate an agreement among the dairy farmers and milk distributors of the Chicago milkshed.²²

The system of milk marketing orders that emerged from these hearings had one essential goal: to drive a wedge between outer-ring cheese dairymen and inner-ring bottled milk farmers. Future outbreaks like the Milk Pool strike would be prevented by establishing a firm price difference, enforced by federal government administrators, between milk used to manufacture cheese and butter and that sold to city consumers as bottled milk. The method for achieving this, known as the "base-surplus plan," had been devised by Clyde L. King in 1920 and widely implemented via collectively bargained contracts between organized dairy farmers and milk dealers starting in the late 1920s.²³ Under the base-surplus plan as administered by the AAA, fluid milk farmers were guaranteed a minimum price for their milk during the "base," or low production, period of the year, and much less for their flush season, or "surplus," milk. The system sought to stabilize milk prices by preventing the farmers in either the outer or inner rings from dumping their seasonal surpluses on each others' markets. Milk dealers agreed to

the AAA between advocates of production control and of marketing agreements, see David E. Hamilton, *From New Day to New Deal: American Farm Policy from Hoover to Roosevelt, 1928-1933* (Chapel Hill: University of North Carolina Press, 1991).

²¹ Milk Council, Inc., Chicago Milk Dealers Association, and Pure Milk Association to Henry A. Wallace, May 26, 1933, RG 136, Dossiers of Materials on Suspended or Abandoned Marketing Agreements, Entry 25, (hereafter Entry 25), Box 41, Folder 9; Pure Milk Association to Henry A. Wallace and George N. Peek, Jul. 5, 1933, Secretary of Agriculture Records, RG 16, General Correspondence, Entry 17, National Archives II, College Park, MD (hereafter RG 16, Entry 17), Box 1811, Folder 3.

²² Hearing on Proposed Marketing Agreement, Washington, DC, Jun. 5, 1933, RG 136, Entry 25, Box 42, Folder 1; Block, "Development of Regional Institutions," 200-61.

²³ Block, "Development of Regional Institutions," 208; Clyde L. King, *The Price of Milk* (Philadelphia: John C. Winston, 1920); Madison Milk Producers' Association Board of Directors, Members' Newsletter, Apr. 10, 1928, AMPI Records, Box 1, Folder 1; Madison Milk Producers' Association, "Madison Milk Producers Association Re-affirms Sunday's Advertisement and Explains 'Base and Surplus' Program of Prices," typescript, n.d. (Nov. 23, 1933), *ibid.*, Box 1, Folder 5. Events during World War I led King to develop the "base-surplus plan." See James Guth, "Herbert Hoover, The U.S. Food Administration, and the Dairy Industry, 1917-1918," *Business History Review* 55 (Summer 1981): 170-87.

cooperate in the milk marketing agreements even though it meant they had to buy from farmers at higher prices, largely because the system guaranteed them a reliable source of Grade A milk at stabilized prices.²⁴ The first federal milk marketing agreement went into effect in Chicago in 1933, and although it quickly broke down due to lack of enforcement, it was copied in cities around the country including Boston, Indianapolis, Detroit, New York, and Philadelphia. After legislative amendments to the AAA in 1934 and the passage of the 1937 Agricultural Marketing Act that bolstered the enforceability of the orders, USDA administration of prices in the nation's milksheds became a permanent policy for dealing with the "milk problem."²⁵

The USDA's development of milk marketing orders was initiated by Chicago's fluid milk farmers and dealers, but the agency's long-term commitment to the program owed most to the work of John D. Black. Born in a dairy region of southern Wisconsin in 1883, Black became one of the nation's most influential agricultural economists, receiving his Ph.D. at the University of Wisconsin in 1918, then teaching at the University of Minnesota until 1927, when he moved to Harvard University to teach until his death in 1960. Although he never took a permanent government position, many of his students became members of the New Deal and later administrations, and Black frequently served as a consultant on farm policy boards. Furthermore, the Agricultural Adjustment Act, with its focus on production controls, was largely a product of Black's work in refining M. L. Wilson's concept of "domestic allotments."²⁶ Firmly committed to the use of production controls rather than marketing agreements to stabilize farm incomes, Black was a somewhat unlikely candidate to be tapped by Edwin G. Nourse of the Brookings Institution in 1934 to assess the early results of the AAA's milk marketing program. Convinced of the importance of the project, however, Black was determined to ascertain whether the milk marketing orders should be treated as only emergency measures or as permanent

²⁴ Milwaukee Co-operative Milk Producers, "Why Should I Sign a Marketing Agreement?" Pamphlet, n.d. (1933?), AMPI Records, Box 1, Folder 5; "Informal Conference on the Chicago Milk Agreement," Jul. 5, 1933, RG 136, Entry 25, Box 41, Folder 9; Block, "Development of Regional Institutions," 190-98; Black, *Dairy Industry and the AAA*, 83-115.

²⁵ Chicago came under Federal Milk Marketing Order No. 41 in 1937, continuing to this day with only a brief interruption in 1966. California milksheds never took part in the federal milk marketing orders, developing instead their own state-level approaches. Block, "Development of Regional Institutions," 245-61; E. Melanie DuPuis, *Nature's Perfect Food: How Milk Became America's Drink* (New York: New York University Press, 2002), 201-6.

²⁶ Biographical notes, John D. Black Papers, Box 32, Folder 1; Kirkendall, *Social Scientists*, passim; Hamilton, *From New Day to New Deal*, 182.

solutions to the milk problem. In *The Dairy Industry and the AAA*, published in 1935, Black offered both a comprehensive history of the orders and a sustained argument for the system's continuation into the indefinite future. Most important, Black defined the milk problem in such a way that the marketing orders would be seen by future USDA policymakers as the only legitimate approach to stabilizing the milk economy.

The essence of the milk problem, according to Black, was a lack of order. More specifically, Black saw the price wars and milk strikes of the early 1930s as undesirable "disturbances" of von Thünen's ideal model, where dairy farmers made rational marketing decisions based on their distance from the city. Dairymen located far from city centers should stick to the production of milk for manufacturing purposes—cheese, butter, and evaporated milk—and not try to encroach on the fluid markets of inner-ring farmers, thereby driving down the price of milk for all farmers. Black was particularly disdainful of milk tank truck drivers who, since the mid-1920s, had begun dissolving the firm boundaries between inner-ring and outer-ring farmers that had been created by the rigid freight structures of the railroads.²⁷ After a set of Interstate Commerce Commission rulings in 1916-1917, railroads developed a uniform rate schedule based on geographical distance from urban markets, which effectively made shipment of fluid milk from beyond approximately 100 miles too expensive for outer-ring farmers to compete. Railroad transportation costs were directly tied to a farmer's distance from the city, essentially enforcing compliance with von Thünen's rings (see **Map 2.1**).²⁸

Truckers, on the other hand, did not have to comply with ICC rate regulations. Paid by milk distributors to bring milk from farms to country collecting stations, truckers were mainly interested in filling their tanks fully and quickly. This could often be done more easily by traveling on a highway straight out from the city, collecting from farms along the way, rather than by traveling circumferentially within the inner ring of a city's milkshed where roads could be unreliable. The "evil effect" of this, according to Black, was the recruitment of outer-ring farmers into the fluid milk market, thereby creating a persistent problem of surplus and "serious

²⁷ Ralph P. Hotis, *Transporting and Handling Milk in Tanks* (Washington: USDA, 1931); Beal and Bakken, *Fluid Milk Marketing*, 165-6.

²⁸ John M. Cassels, *A Study of Fluid Milk Prices* (Cambridge, MA: Harvard University Press, 1937), 20-40, 123-32.

economic waste."²⁹ Black saw an "urgent ... need for introducing order into the business of transporting milk from the farm to the city, especially by truck."³⁰ The "confusion" that reigned in the dairy industry deeply worried Black, who saw in the AAA milk marketing orders—with their firm price differentials between manufactured milk and fluid milk—a chance to create a system of "orderly marketing" that would end the political and economic strife between the various classes of dairy farmers.³¹ The milk problem was thus narrowly defined as a problem of disorder in the countryside. Truckers and farmers who refused to obey the theories of von Thünen were creating unnecessary competition in the dairy industry, and a federally administered system of price differentials was the most effective solution.

Unfortunately, John D. Black's definition of the milk problem ignored the interests of two very important groups—organized urban milk deliverymen and city consumers. The USDA's milk marketing orders, with their single-minded focus on dividing farmers into the abstract rings of von Thünen, made no effort to effectively address the wage demands of labor unions. In the early negotiations that established the Chicago milk marketing order, this issue had been thoroughly discussed. In particular, Jerome Frank, the general counsel for the AAA during the drafting of the orders, advocated adherence to section 7a of the National Recovery Act to include workers' interests in the administrative structure of the marketing order system. The negotiations for the original Chicago marketing order led milk dealers to agree to maintain the relatively high wages prevailing for organized deliverymen in that city.³² Frank nonetheless feared that without a written guarantee of the right of dairy employees to bargain collectively, dairy workers in other cities' marketing orders would suffer wage cuts from milk dealers trying to pass on the higher costs of their raw product without raising consumer prices.³³ An "urban

²⁹ Black, *Dairy Industry and the AAA*, 222.

³⁰ *Ibid.*, 302.

³¹ John D. Black to James E. Russell, Mar. 2, 1934, John D. Black Papers, Box 5, Folder 3. See also DuPuis, *Nature's Perfect Food*, 170-6; Block, "Development of Regional Institutions," 60-9.

³² "Informal Conference on the Chicago Milk Agreement," Jul. 5, 1933, RG 136, Entry 25, Box 41, Folder 9; Hearing on Proposed Marketing Agreement, Washington, DC, Jun. 5, 1933, *ibid.*, Box 42, Folder 1; Block, "Development of Regional Institutions," 227-8; Carroll Lawrence Christenson, "Employment and Earnings in Commercial Milk Distribution, 1929-34," *Monthly Labor Review* 43 (Jul. 1936): 139-49.

³³ Jerome Frank to Glenn McHugh, Jul. 10, 1933, RG 136, Entry 25, Box 42, Folder 2; Hearing before the Secretary of Agriculture with Reference to Modification of Any Provisions of the Marketing Agreement for Milk—Chicago Milk Shed (Agreement No. 1), Docket No. 1-C, Volume 2, Chicago, IL, Nov. 30-Dec. 1, 1933, *ibid.*, Box 41, Folder 1; Hendrik Shipstead to Henry A. Wallace, Jul. 16, 1933, Secretary of Agriculture Records, RG 16, Entry 17, Box 1811, Folder 3.

liberal" who viewed the AAA as a means of achieving a European-style social welfare state rather than as a mere tool for raising farmers' incomes, Frank would be included in the famous "purge" of liberals from the USDA in 1935.³⁴ Without Frank, the USDA would administer all of its future milk marketing orders with little consideration of organized labor's interests.

Chicago consumers, meanwhile, saw the milk marketing order as an undisguised effort by milk dealers to raise the retail price of milk. Prior to the order's institution, chain grocery stores and "cash-and-carry" stores had begun competing directly with milk dealers by selling milk at prices several cents per quart lower than the home-delivery prices of dealers. By not delivering directly to consumers' doorsteps, the chain stores and cash-and-carry outfits were able to sell a quart of milk for nine cents in 1932—two cents less than the home-delivered price. Chicago's milk dealers, who essentially wrote the first milk marketing order on their own terms, sought to limit this competition by requiring all retailers to sell milk at the price of a home-delivered quart; the dealers claimed that stores were able to sell their milk cheaply only by using it as a "loss leader" and by "sweating their labor."³⁵ After the advent of the milk marketing order, retail prices of milk immediately rose from 9 cents to 11 cents per quart.³⁶ When the USDA called a hearing in Chicago in November of 1933 to assess the order's strengths and weaknesses, consumer representatives lodged bitter complaints against the minimum retail price. The most succinct protest came from one Miss Sylvia Schmidt, who saw price fixing as an unfair tax on consumers willing to drive or walk to stores to get cheaper milk: "People who want the privilege of having their milk delivered should pay for that privilege and people who are willing to take the inconvenience of getting their milk personally should be allowed the difference in price."³⁷ Rose Fourier agreed, noting that "consumers are quite angry" at being "compelled by the Government" to pay higher prices for milk from powerful dealers such as Borden.³⁸ Robert S. Marx, representing the Kroger Grocery chain, pointed out that his company

³⁴ Jess Gilbert, "Eastern Urban Intellectuals and Midwestern Agrarian Intellectuals: Two Group Portraits of Progressives in the New Deal Department of Agriculture," *Agricultural History* 74 (Sep 2000): 162-80.

³⁵ Jerome N. Frank to George Peek, Mr. Brand, Chester Davis, Aug. 28, 1933, RG 16, Entry 17, Box 1811, Folder 3.

³⁶ Chicago City Council, Subcommittee on Milk, to Franklin D. Roosevelt, Nov. 2, 1933, RG 16, Entry 17, Box 1814, Folder 2.

³⁷ Hearing before the Secretary of Agriculture with Reference to Modification of Any Provisions of the Marketing Agreement for Milk—Chicago Milk Shed (Agreement No. 1), Docket No. 1-C, Volume 1, Chicago, IL, Nov. 27-29, 1933, RG 136, Entry 25, Box 40, Folder 9, pp. 29-30.

³⁸ *Ibid.*, 33, 31.

was "forced to charge the consumer for a [home] delivery service that we don't give him, that he does not want, that he cannot afford to pay for."³⁹

Chicago consumers' protests against the injustice of the minimum retail price convinced the USDA to eliminate the policy from future iterations of its milk marketing orders.⁴⁰ However, the USDA's primary goal in the milk marketing orders was to stabilize farmers' prices, a goal which economists such as John D. Black felt was best achieved by cooperating with the largest milk dealers. This meant that when milk dealers in cities throughout the country petitioned their city or state milk control boards to set minimum retail prices for milk, the USDA made no effort to stop the de facto reinstitution of price-fixing that forced stores to sell at artificially high prices. In 1939, *Fortune* magazine surveyed 129 cities and found that half of them had retail price-fixing laws, forcing the average chain store to sell a quart of milk at four cents over cost, even though most chains believed one cent would be a reasonable margin.⁴¹ Consequently, most consumers had little choice but to pay an extra three or four cents to have their milk delivered to their doorsteps. The policy of "orderly marketing" made no room for lower-cost distribution methods.

This failure to address the broader issues at stake in the politics of the price of milk meant that, in the long run, the milk marketing orders were not an effective solution to the milk problem. The late 1930s saw numerous strikes by Teamsters organizing milk delivery drivers in Chicago, Milwaukee, Detroit, New York, and Cleveland—all asking for, and gaining, a greater portion of the milk dollar.⁴² Milk dealers generally responded to drivers' wage demands by increasing the price of milk to consumers.⁴³ Consumers, who had been encouraged to politicize the price of food and other staples by the New Deal's focus on the problem of "purchasing

³⁹ Ibid., 45.

⁴⁰ House Committee on Agriculture, *Regulation of Milk Production, Distribution, and Pricing*, Unpublished hearings on H.R. 8988, 73d Cong., 2d sess., May 3, 1934, 126-7.

⁴¹ "Let 'em Drink Grade A," *Fortune*, Nov. 1939, 82-4, 131-2.

⁴² John S. Picago to Thomas Hughes, Apr. 3, 1938, International Brotherhood of Teamsters Records, Wisconsin Historical Society, Madison, WI (hereafter IBT Records), Reel 16; "Milk in Chicago," *Fortune*, Nov. 1939, 80-1, 124-8; "Milk War in Detroit," *BW*, May 1, 1937, 28; "Milk Strike," *Newsweek*, Aug. 28, 1939, 38; "History and Business of Bowman Dairy Company," n.d. (1955?), Bowman Dairy Company Records, Chicago Historical Society, Chicago, IL (hereafter Bowman Records), Series I, Subseries 1, Box 1, Folder 1, 8-9; International Brotherhood of Teamsters, Milk and Ice Cream Drivers and Dairy Employees' Union, Local No. 225, *Dairy and Ice Cream Agreement*, April 1, 1938-March 31, 1939; Percy S. Hardiman, Interview by Dale Trelevan, Aug. 17, 1976, Tape 5, Side 1.

⁴³ "Chicago Milk Pact," *BW*, Sep. 2, 1939, 29.

power," consequently began to demand investigations into the "milk trust."⁴⁴ Consumers' outrage at the prices charged by national dairy chains like Borden's and National Dairy Products culminated in 1939 with vitriolic anti-monopoly hearings before the Senate's Temporary National Economic Committee (TNEC), chaired by Senator Joseph O'Mahoney.⁴⁵ The following exchange between O'Mahoney and Frederic C. Howe, former Consumers Counsel of the AAA, captures the gist of the hearings, which resulted in anti-trust actions against the national dairy distributors:⁴⁶

O'Mahoney: Is it your conclusion, after all your studies, that distributors maintain the price of milk at an excessively high figure which is not warranted by the cost of production?

Howe: It is.⁴⁷

The USDA's effort to achieve what John D. Black saw as "orderly marketing" in the dairy industry satisfied only a powerful minority of those affected by the price of milk—that is, organized inner-ring farmers and city milk dealers. Consumers, Teamsters, and outer-ring farmers shut out from the marketing orders all continued through the late 1930s to agitate for a "fair price."⁴⁸ The milk problem remained fundamentally unsolved.

⁴⁴ "FTC Raps Big Dairies," *BW*, Jan. 9, 1937, 34, 37; "Hit Chicago Dairies," *BW*, Jul. 16, 1938, 15-6; John T. Flynn, "The Milk Monopoly," *New Republic*, Apr. 5, 1939, 250; "The Milk Racket," *Nation*, May 6, 1939, 517-8.

⁴⁵ Temporary National Economic Committee, *Investigation of Concentration of Economic Power, Part 7: Milk Industry, Poultry Industry, Hearings*, 76th Cong., 1st sess., Mar. 9-11, May 1-3, 1939.

⁴⁶ "Milk Chiefs Deny Monopoly," *BW*, May 6, 1939, 16; "Milk Bill Fits Anti-Trust Pattern," *BW*, May 27, 1939, 25-6.

⁴⁷ Temporary National Economic Committee, *Investigation of Concentration of Economic Power, Part 7*, 2778.

⁴⁸ "Milk Spills into Politics," *BW*, Sep. 12, 1936, 15-6; Alan Barth, "Only the Cows Are Contented," *Nation*, Jan. 1, 1938, 744-5; James Ernest Boyle, "Battle of Milk," *Saturday Evening Post*, Nov. 13, 1937, 18-9; "'Hold Your Milk!'," *Time*, Sep. 14, 1936, 73; "Dairy Crackdown," *BW*, Jan. 25, 1941, 28-30; Robert A. Wilkinson, "Wanted: More Milk," *Atlantic Monthly*, Jan. 1941, 64-70.

The Milwaukee Milk Survey and the "Ideal Distribution System"

Before the milk marketing orders became entrenched federal agricultural policy in 1937, there were alternatives proffered to create a "fair price" for milk that farmers, consumers, and labor could all agree upon. One of the more interesting episodes came in Milwaukee in the spring of 1934, when a coalition of Socialist city councilmen initiated the Milwaukee Milk Survey to investigate profits in the milk industry.⁴⁹ Run by sociologists, economists, and industrial engineers, the survey was designed to decide whether the city "shall ... acquire the existing milk distributing and pasteurization plants, thus establishing a municipal monopoly."⁵⁰ Inspired by the municipally owned milk plant built in Wellington, New Zealand in 1919, the Milwaukee Socialists sought to simultaneously satisfy farmers, consumers, and organized milk deliverymen by buying out the mutually despised "milk trust."⁵¹

The centerpiece of the Milk Survey's recommendations was what its engineers termed an "ideal distribution system." According to an unpublished draft of the Survey's report, the real cause of high milk prices was not the greed of the milk dealers but their "wastefulness and inefficiency in all of the major phases of handling."⁵² At a time when 86% of Milwaukee families had their milk delivered to their doorsteps by 25 different milk plants, the major cost incurred in milk marketing was in distribution.⁵³ For a medium-sized plant, the survey's economists found, the costs of owning and maintaining trucks and paying deliverymen's wages cost 26 cents of each consumer dollar spent on milk—the greatest single cost other than the price paid to farmers for the raw product.⁵⁴ This was far from "ideal."

⁴⁹ "Socialists Find Selves in Strike Mix-Up," *Milwaukee Journal*, Apr. 22, 1933, 3; "Council Votes Milk Survey," *Milwaukee Journal*, Jan. 22, 1934, evening ed., 1.

⁵⁰ Frank Krawczak (City Clerk), Certified Copy of Resolution 52742, Mar. 15, 1934 (adopted Jan. 22, 1934), RG 136, Entry 26, Box 13, Common Council Folder.

⁵¹ H. Bronson Cowan, "Municipally Owned and Operated Milk Plant," *American City*, Jan. 1940, 47-8; M. B. MacMillan, "Status of the Milk Survey," n.d. (Apr. 1934?), RG 136, Entry 26, Box 13, Condition of Project Folder; Mordecai Ezekiel to E. W. Gaumnitz and Frederic Howe, Oct. 20, 1933, RG 16, Entry 17, Box 1812, Folder 1; John L. Grunwald (Asst. Secretary to Mayor of Milwaukee) to Henry A. Wallace, Nov. 25, 1933, *ibid.*, Box 1814, Folder 2. Other Wisconsin cities also heard calls in the 1930s for municipal ownership to bring a "fair price" by "putting the babies above the Borden's." Glenn P. Turner, "Milk for Madison," 1933, AMPI Records, Box 1, Folder 12.

⁵² Rodger Crabtree, "Draft of Report on Milwaukee Milk Market," 1936, RG 136, Entry 26, Box 8, Folder 1.

⁵³ Milwaukee Journal Consumer Analysis of the Greater Milwaukee Market, 1934, RG 136, Entry 26, Box 10, Folder 2, p. 44.

⁵⁴ "Distribution of Consumers' Dairy Dollar," n.d. (1934), RG 136, Entry 26, Box 1.

George H. Boyer, an unemployed industrial engineer who had designed chemical and electrical plants before the Depression, was hired by the Survey to draw up plans for reducing the cost of delivering milk to consumers.⁵⁵ Boyer considered himself an "efficiency expert" whose role in the Survey was to "correc[t] the present uneconomical distribution of milk with its attendant injustice to the producer and consumer."⁵⁶ Boyer's concern regarding this "injustice" was apparently not motivated by adherence to Socialist politics; he was a proud member of the American Legion, and his employer noted that he was "so far from being a Socialist that the only paper he reads is the *Chicago Tribune*."⁵⁷ But Boyer, committed to efficiency after his education as an industrial engineer at the University of Missouri, saw the Survey "not merely [as] a fact finding body" but as a means for solving Milwaukee's milk problem once and for all.⁵⁸ Boyer was convinced that delivery costs were the root of the problem, creating an unnecessary spread between what farmers received and what consumers paid for milk. In his proposal for an "ideal distribution system," Boyer argued that the farmer-consumer price spread on a 10-cent quart of milk could be reduced from 7.5 cents to 3.1 cents.⁵⁹

How would this ideal distribution system work? Unlike the existing system, there would be no duplication of milk delivery routes. With 25 different dairies delivering to the homes of 750,000 residents, Milwaukee's competitive milkmen often drove over the same streets.⁶⁰ The largest milk dealer, Gridley Dairy, served 73,000 homes and was a subsidiary of the Borden Company, the nation's largest milk distributor. Most of Gridley's competitors were much smaller, including the upstart Golden Guernsey Dairy Cooperative, owned by local farmers who advertised their Guernsey milk as higher in quality than Gridley's, serving 12,000 homes. With their own bottling plant, the farmer-members of Golden Guernsey successfully eliminated the

⁵⁵ C. Val. Baxter (Director, Skilled Labor, Milwaukee Milk Survey) and Fred Buenger (Director, Skilled Labor, Milwaukee Milk Survey) to Edwin Knappe, n.d. (Mar. 1934), RG 136, Entry 26, Box 43, Folder 5; George Boyer, Job Application, Mar. 26, 1934, RG 136, Entry 26, Box 44, Folder 9.

⁵⁶ George H. Boyer to Rodger Crabtree, May 21, 1934, RG 136, Entry 26, Box 45, Folder 7.

⁵⁷ Rodger Crabtree to E. W. Gaumnitz, Nov. 26, 1934, RG 136, Entry 26, Box 43, Folder 24; George Boyer, Job Application.

⁵⁸ Boyer to Crabtree, May 21, 1934.

⁵⁹ George H. Boyer (Designing Engineer), "'Ideal' Dairy Plant," unpublished report, 1934, RG 136, Entry 26, Box 11, Folder 1; Boyer, "Ideal Delivery System," draft report, n.d. (1934), RG 136, Entry 26, Box 11, Folder 2. See also Gustave DeWald, "Story of Operation of Ideal Milk Plant," draft report, n.d. (1934), RG 136, Entry 26, Box 11, Folder 5.

⁶⁰ Boyer, "Ideal Delivery System."

middleman to raise their own profits.⁶¹ Other dairies included the Blochowiak Dairy, serving 3,000 homes in the densely knit Polish neighborhoods of Milwaukee, and the consumer-owned Milk Consumers' Association, with 2,500 customers.⁶² Each of these dairies served a unique customer base with varying loyalties—whether to low price, high quality milk, or local or ethnic ownership. None of this mattered to George Boyer, however. Such a cacophony of competitive milk dealers—each with its own set of milkmen, wagons, and trucks—was to him a sign of gross inefficiency.

Boyer consequently asked a friend at General Motors to lend the Survey a few of GM's latest truck models to perform an "objective" delivery cost analysis. V. M. Babcock happily offered GM's new 3-man T-33b 76-horsepower refrigerated truck, operated by one driver and a deliveryman for each side of the street. The standard trucks in use at the time—if trucks were used at all, since wagon delivery was not uncommon in 1934—would have had one driver who had to not only drive, but walk milk bottles to doorsteps on either side of the street.⁶³ For his ideal deliverymen, Boyer selected clerks from the Survey's front offices who were "not in the best of physical condition," and told them to deliver the test milk bottles to each customer's doorstep, count to ten for a margin of safety, and return the empties to the truck before the driver moved to the next stop. Meanwhile, a "competent industrial engineer ... who was also an official timer for the American Amateur Athletic Union" performed time-motion studies to determine the precise amount of time required to make an average delivery. The results of the experiment, according to Boyer, showed that even with inexperienced milkmen the average cost per delivery stop could be reduced from 4¼ cents under the existing competitive system to 1½ cents. The

⁶¹ *Milwaukee Journal Consumer Analysis*, 44; Golden Guernsey Dairy Cooperative, *Co-Operator*, Sep.-Oct. 1935, Golden Guernsey Dairy Cooperative Records, University of Wisconsin-Milwaukee Area Research Center, Milwaukee, WI (hereafter Golden Guernsey Records), Box 1, Folder 1; Articles of Incorporation of Golden Guernsey Dairy Cooperative, 1930, RG 136, Entry 26, Box 45, Folder 3; "Farmers Reap Dairy's Profit," *Milwaukee Journal*, Feb. 18, 1934, sec. 2, p. 4; Herman H. Bruhns, Architectural Appraisal Report, Golden Guernsey Dairy Cooperative, May 1, 1934, RG 136, Entry 26, Box 4; "Dairy Co-op Has Big Year," *Milwaukee Journal*, Feb. 19, 1933, 17; Percy S. Hardiman, Interview by Dale Trelevan, Aug. 3, 1976, Tape 1, Side 1. Milwaukee's Golden Guernsey dealership was one of many nationwide that advertised yellowish Golden Guernsey milk as higher in butterfat than that of other cows, therefore worth a higher price. See Advertisement for Golden Guernsey Milk, "Only the Wealthy Could Enjoy It," 1937, N. W. Ayer Advertising Proof sheets, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Series 2, Box 247, Folder 4.

⁶² *Milwaukee Journal Consumer Analysis*, 45; Milk Consumers Association, "Buy Your Milk Direct from the Farmer, Save the Profit!" pamphlet, n.d. (1933?), RG 136, Entry 27, Box 13, Clippings Folder.

⁶³ V. M. Babcock (General Motors Truck Co., Zone Manager) to George Boyer, "Transportation Cost Estimate," Oct. 24, 1934, RG 136, Entry 26, Box 10; Larry Aeilts, "The Milkman's Favorite Truck," *Michigan History Magazine* 82:2 (1998): 8-11.

"ideal system" would require bigger trucks and fewer milkmen, but by cutting the mileage traveled by a third, the remaining drivers could be paid wages above union-scale, farmers' milk checks could remain the same, and yet the consumer price of milk would drop several cents per quart.⁶⁴

The milk problem was, in this formulation, neither a result of the natural seasonality of milk production nor of the irreconcilable interests of farmers, consumers, workers, and capitalists. Instead, it was a problem of distribution, and as such, deserved a technological fix. Municipal ownership of milk distribution would allow the replacement of inefficient, redundant marketing machinery with the latest in delivery trucks, dispatched to milk drinkers' homes according to the precepts of scientific management. But this "ideal distribution system" never saw the light of day, even though the Wisconsin legislature passed a bill in 1935 allowing cities to own and operate milk distribution plants as municipal monopolies.⁶⁵ Why not?

First, despite the technocratic elegance of Boyer's proposal, the "ideal distribution system" was never viable in the local political scene. Initiated by Socialists—even though they were the popular and relatively conservative "sewer Socialists" running Milwaukee's city government—the idea of municipally operated milk plants was easily attacked by private milk dealers.⁶⁶ Milk quality would suffer, claimed the dairies, if leftist city bureaucrats tried to learn the intricacies of distributing pasteurized milk.⁶⁷ Furthermore, although the "ideal system" was meant to benefit farmers as well as consumers, Milwaukee's inner-ring farmers despised the idea, calling it a "move by grafters" and "unscrupulous politicians" to "control [the milk] market."⁶⁸ Referring to the city's recent troubles in meeting its employee payrolls, a group of farmers who belonged to the Milwaukee Cooperative Milk Producers confided with a Survey

⁶⁴ George Boyer to Rodger Crabtree, "Memorandum on Saving to Be Made in Milk Delivery," May 25, 1934, RG 136, Entry 26, Box 11, Folder 5; George H. Boyer, "Ideal Delivery System," draft report, n.d. (1934), RG 136, Entry 26, Box 11, Folder 2; Gustave DeWald, "Story of Operation of Ideal Milk Plant," draft report, n.d. (1934), RG 136, Entry 27, Box 11, Folder 5.

⁶⁵ "Passes Ownership Bill: Municipalization of Milk Provided in Badger Measure," *Dairy Record*, Jul. 3, 1935, 5, RG 136, Entry 26, Box 10, Publications Folder.

⁶⁶ On "sewer socialism," see Douglas E. Booth, "Municipal Socialism and City Government Reform: The Milwaukee Experience," *Journal of Urban History* 12 (Nov. 1985): 51-74.

⁶⁷ Rex G. Conklin to Rodger Crabtree, "Pertaining to Conversation with I. H. Bernstein," Mar. 22, 1934, RG 136, Entry 26, Box 13, Reports on Conferences Folder.

⁶⁸ "Municipal Owned Dairy Opposed by Producers" and "'Municipal' Cows," *Milwaukee Milk Producer* (Feb. 1934): 1-3.

representative that "[private] dairies ... have always paid cash for their purchases.... If the City doesn't pay its own employees ... what will they do to the farmers?"⁶⁹

The second, longer-term reason for the Milk Survey's failure was that it was taken over by the USDA, which was already implementing its own approach to the milk problem in the form of federal milk marketing orders. In March 1934, with its work "obviously incomplete," the Survey was forced to find new funding when President Roosevelt cancelled the Civil Works Administration that had been supporting the Survey.⁷⁰ Applications were sent to the new Federal Emergency Relief Administration, which agreed to fund the project under the condition that "the emphasis of the study ... be changed" from a plan for municipal ownership to an "objective fact-finding commission." Most important, FERA demanded that the project be headed by a "competent economist" in the USDA. J. M. Tinley, an agricultural economist in the AAA's dairy section, agreed to take over the survey in May 1934 because he saw its accumulated data on milk prices, gleaned from direct inspections of dairy distributors' "books," as too valuable to remain unpublished.⁷¹

Significantly, John D. Black—the theoretician of "orderly marketing"—became an academic consultant to the project. Both Tinley and Black were firmly opposed to public ownership of milk plants. Black admired the "orderliness and unification" that a municipal monopoly could provide, but feared that such a system would put milk pricing solidly in the political realm rather than in the marketplace, allowing consumers to dictate the price of milk through irrational demands on city politicians rather than through rational observation of the laws of supply and demand.⁷² Taking an early look at the first draft of the Survey's report, John D. Black informed its author that the "ghost of socialism still persist[ed]" in the report and that George Boyer's distribution system, in particular, "len[t] body to the spirit."⁷³ This was not

⁶⁹ Mr. Blatz to Rodger Crabtree, "Report on Trip to South Milwaukee Farmers," Apr. 13, 1934, RG 136, Entry 27, Box 46, Folder 6.

⁷⁰ D. S. Teter, "Report on Condition of Project 809," Apr. 19, 1934, RG 136, Entry 27, Box 13, Condition of Project Folder; MacMillan, "Status of the Milk Survey"; Volunteer Agreement, Mar. 31, 1934, RG 136, Entry 27, Box 13, Folder 1.

⁷¹ J. M. Tinley to Rodger Crabtree, Sep. 7, 1934, RG 136, Entry 26, Box 44, Folder 16; J. M. Tinley and Rodger C. Crabtree to Distributors, June 21, 1934, RG 136, Entry 26, Box 13, Contributions by A.A.A. Experts Folder.

⁷² Black, *Dairy Industry and the AAA*, 246-68, quote on 253.

⁷³ John D. Black to Rodger Crabtree, quoted in Crabtree to J. M. Tinley, Aug. 8, 1934, RG 136, Entry 26, Box 44, Folder 16. Black would later publicly criticize the Milwaukee idea for unnecessarily politicizing the milk problem,

meant as a compliment, as indicated by the response to the final draft of the report by O. M. Reed—a dairy economist in the USDA and personal friend of Black. Aghast at the political implications of a municipally owned "ideal distribution system," Reed told the chief of the AAA's dairy marketing section that he "would be among, if not the last, to recommend publishing the report as it now stands."⁷⁴ Reed's letter was accompanied by a heavily edited version of the report, which, after passing under the pens of agricultural economists L. H. Bean, Frederick V. Waugh, John D. Black, and Paul E. Quintus, relegated the "ideal distribution system" to a purely hypothetical exercise in idealistic fancy.⁷⁵ George Boyer, meanwhile, was firmly told to hand over any copies of the original report he had in his possession and agree never to mention the technocratic recommendations of the Survey again.⁷⁶

The Milwaukee Milk Survey's version of an "ideal distribution system" was effectively swept under the rug. Price regulations that served only to guarantee inner-ring milk farmers and city milk dealers a higher price for their product became the USDA's primary method for preventing disputes over the price of milk, particularly after 1937 when Congress passed the Agricultural Marketing Act, shoring up the constitutionality of federal milk marketing orders.⁷⁷ The idea of regulating milk as a public utility never completely died out in academic circles, with University of Wisconsin economist W. P. Mortenson articulating a defense of the concept in 1940.⁷⁸ Mortenson did not benefit from the influence of a John D. Black, however, and his recommendations were treated as merely intellectual exercises.⁷⁹ In any case, events of World

which he was certain could be solved through price regulation administered by objective economists in the USDA. Black, *Dairy Industry and the AAA*, 246-68, esp. 255.

⁷⁴ O. M. Reed to E. W. Gaumnitz (Chief, AAA Dairy Section), "Milwaukee Study," Jun. 11, 1936, RG 136, Entry 26, Box 41, Folder 2.

⁷⁵ Dairy Section, Agricultural Adjustment Administration, USDA, "A Survey of Milk Marketing in Milwaukee, (preliminary first draft)," Jun. 10, 1936, RG 136, Entry 26, Box 41, Folder 2; E. W. Gaumnitz to H. R. Tolley, "Survey of Milk Marketing in Milwaukee," Dec. 12, 1936, RG 136, Entry 26, Box 41, Folder 5. The published version of the report is *A Survey of Milk Marketing in Milwaukee* (Washington: USDA, Agricultural Adjustment Administration, Division of Marketing and Marketing Agreements, Dairy Section, 1937).

⁷⁶ Rodger Crabtree to George Boyer, Jan. 17, 1935; Crabtree to Boyer, Jan. 28, 1935; Boyer to Crabtree, Mar. 17, 1935; Crabtree to Boyer, Mar. 29, 1935; RG 136, Entry 26, Box 43, Folder 4.

⁷⁷ The 1933 Agricultural Adjustment Act was declared unconstitutional by the Supreme Court in 1936. The Agricultural Marketing Act, along with the Soil Conservation and Domestic Allotment Act of 1936 and the Agricultural Adjustment Act of 1938, served to re-establish the goals and methods of the original Act without the processing tax that had caused the Court to overturn the law. See Skocpol and Finegold, "State Capacity and Economic Intervention in the Early New Deal," 268-75.

⁷⁸ W. P. Mortenson, *Milk Distribution as a Public Utility* (Chicago: University of Chicago Press, 1940).

⁷⁹ Frank J. Gillespie, a Teamster organizer in Chicago, corresponded briefly with Mortenson on lobbying for public ownership of milk distribution as a means of ensuring higher wages for milk deliverymen, but no action was taken by the union. Minutes, International Brotherhood of Teamsters Mid-States Dairy Conference, Chicago, IL, Mar. 14-15,

War II would temporarily bolster the milk marketing system established during the 1930s, postponing such fundamental reconsiderations of the milk problem until the postwar period.

World War II and the Continuing Milk Problem

America's entry into World War II did not fundamentally change the politics of milk pricing. Wartime purchases of dairy products, both for military and consumer uses, brought higher prices to all dairy farmers. Debates over consumer prices and Teamsters' wages were forestalled by federal policies designed to maintain existing arrangements in the milk industry. The Office of Price Administration (OPA) instituted price controls and subsidies that might have provided consumers with a state-supported voice in directing milk pricing policies, but such efforts were stymied by opposition from milk dealers and the USDA. As a result, the OPA consistently raised the price paid to inner-ring farmers for fluid milk through the war, thereby reinforcing the USDA's system of milk marketing orders. Furthermore, actions by the National War Labor Board and the Office of Defense Transportation effectively created a truce between Teamster milk truck drivers and city milk dealers, limiting Teamster efforts to gain power in the milk industry. Federal price control and labor policies prevented direct attacks on the milk marketing orders, but set the stage for consumers and Teamsters to put pressure on the USDA to rearrange the milk marketing structure in the postwar period.

America's dairy farmers prospered during the war. Inner-ring fluid milk farmers achieved their best sales in over a decade as urban consumers' incomes rose due to wartime employment. Per capita consumption of milk in 1941 reached 162 quarts; a year later consumption was up to 172 quarts, and in 1943 the average American drank 186 quarts of milk.⁸⁰ At the same time, the U.S. armed forces supplied their training camps and military bases with generous quantities of milk. Many of these bases were located in southern states without

1941, IBT 695 Records, Box 12, Folder 8. See also Wesley McCune, "Why Milk Costs So Much," *Harper's*, May 1942, 604-11. After developing his ideas on treating milk as a public utility, Mortenson would devote the rest of his career to poultry marketing issues. Gustof A. Peterson, et al., "Memorial Resolution of the Faculty of the University of Wisconsin on the Death of Emeritus Associate Professor William P. Mortenson," Apr. 9, 1984, Faculty Biographical Files, University of Wisconsin Archives, Madison, WI.

⁸⁰ Russell and Fantin, *Studies in Food Rationing*, 265.

adequate local milk supplies, forcing the Army to import milk from the Chicago milkshed to strengthen soldiers' bones.⁸¹ This domestic demand for bottled milk was further supplemented by extraordinary demand for cheese, butter, and evaporated milk—particularly by the British under lend-lease agreements. In 1942, for instance, the British imported the equivalent of more than 2 billion quarts of manufactured milk products under lend-lease.⁸² Rising demand for fluid and manufactured milk meant that both inner-ring and outer-ring dairy farmers gained their highest prices in decades, especially in the early years of the war. By the end of 1941, even before the United States had fully mobilized for war, milk had reached 106% of parity price—indicating that dairy farmers were making even more money than they had during the prosperous years of 1910-1914.⁸³

Under such conditions, dairy farmers had little reason to contest the "fair price" of milk, and consequently might have been willing to abandon the federal milk marketing orders. For the USDA, however, the lend-lease demand for manufactured dairy products served only to further justify the need to maintain a strict divide between inner-ring and outer-ring dairymen. In late 1941, for instance, some Midwestern fluid milk producers began shifting some of their surplus milk to outer-ring manufacturing outlets, attracted by the high prices being paid by cheese and butter factories struggling to meet the sudden increases in demand. As the USDA reported to Congress in its annual report for 1941, such threats to "orderly marketing" required constant vigilance by milk market administrators to keep dairy farmers "in line."⁸⁴

The marketing order system faced its greatest potential challenge in 1942, when the federal government launched an effort to suppress inflation by regulating the entire nation's economy through rationing and price controls. When Congress passed the Emergency Price Control Act of 1942, it not only gave the Office of Price Administration independent status and enforcement powers, but created an opportunity for consumers' interests to be directly

⁸¹ "Milk Rations Seen," *BW*, Jun. 12, 1943, 57.

⁸² "Commodity Letter; A Special Staff Report on Price and Production Trends Affecting Industry," *Wall Street Journal*, Feb. 10, 1942, 1.

⁸³ "Farm Price Index 143%," *NYT*, Dec. 31, 1941, 32. Parity price was a concept developed during the agricultural depression of the 1920s, which compared the prices that farmers received for their commodities with the prices they paid for industrial goods. The main proponent of the parity formula, George N. Peek, established the 1910-1914 period as a time when farmers received a "fair" return on their commodities in relation to their expenditures. Gilbert C. Fite, *George N. Peek and the Fight for Farm Parity* (Norman: University of Oklahoma Press, 1954).

⁸⁴ United States Department of Agriculture, *Report of the Secretary of Agriculture* (Washington: GPO, 1941), 117.

represented in the politics of regulating prices.⁸⁵ In the case of milk, the rising prices gained by dairy farmers at the beginning of the war might have made the OPA into the primary government agency responsible for stabilizing milk prices, rather than the USDA. During the Depression, the need to stabilize farm prices justified a marketing order system that favored inner-ring dairymen and city milk dealers, but during wartime, the pressing issue was inflation—and milk marketing orders were inherently and intentionally inflationary policies. As journalist Wesley McCune pointed out in May 1942, "milk prices are higher than they have been in twenty-one years," a situation "aggravated by pressing war needs" but essentially the result of milk marketing orders, which he saw as "a plain conspiracy to raise prices."⁸⁶ But even though the OPA instituted price ceilings on fluid milk beginning in May 1942, the federal milk marketing orders survived the war; consumers' interests in a "fair price" for milk continued to take second place to the interests of the inner-ring dairy coalition. Why?

The Office of Price Administration failed to capture control of fluid milk pricing because it was never able to institute rationing on milk. Price ceilings without concomitant rationing cannot effectively stabilize consumer prices, since ceilings cause producers to hold back their production, leading to shortages which in turn create incentives to sell at higher prices on the black market.⁸⁷ City milk dealers and fluid milk farmers understood this, and so actively opposed OPA efforts to institute rationing, hoping to prevent the agency's efforts to put firm lids on consumer milk prices.⁸⁸ The milk industry's opposition to the OPA succeeded because food rationing during World War II was administered by the War Food Administration—an agency of the USDA, headed by Secretary of Agriculture Claude Wickard.⁸⁹ Under pressure from the inner-ring milk coalition, the War Food Administration determined early on that any OPA actions in the milk economy "should interfere as little as possible with existing distribution practices."⁹⁰ The Secretary of Agriculture insisted in 1943 that milk was highly perishable, and

⁸⁵ Meg Jacobs, "'How About Some Meat?': The Office of Price Administration, Consumption Politics, and State Building from the Bottom Up, 1941-1946," *Journal of American History* 84 (Dec 1997): 910-41.

⁸⁶ Wesley McCune, "Why Milk Costs So Much," *Harper's*, May 1942, 604, 608.

⁸⁷ Hugh Rockoff, *Drastic Measures: A History of Wage and Price Controls in the United States* (Cambridge: Cambridge University Press, 1984).

⁸⁸ Russell and Fantin, *Studies in Food Rationing*, 267-8.

⁸⁹ Meg Jacobs, *Pocketbook Politics: Economic Citizenship in Twentieth-Century America* (Princeton: Princeton University Press, 2005), Chapter 5.

⁹⁰ Russell and Fantin, *Studies in Food Rationing*, 268.

therefore moved only in localized markets; this would make any efforts to coordinate nationwide rationing at the consumer level "extremely complex."⁹¹ This was certainly true, although whether rationing would have required more administrative machinery than marketing orders is debatable; but for the USDA to turn to consumer-oriented pricing policies rather than farmer-oriented policies would have required a radical break with its own institutional history while also infuriating the Congressional farm bloc.

Without effective rationing of milk, the OPA found itself forced throughout the war to allow price rises to inner-ring dairy farmers to stave off milk shortages. The rise in demand by both civilians and the military put a "squeeze" on milk dealers who could not sell milk at prices higher than the maximums established by the OPA, yet had to pay farmers high enough prices to encourage sufficient production to meet local demand.⁹² For instance, between October and December 1942, milk dealers in Milwaukee increased the price they paid to area farmers from \$2.63 per hundredweight to \$3.00. Too many local farmers had begun diverting their milk to the Chicago market where a hundredweight of fluid milk brought \$3.22, thereby offsetting the higher cost of transportation that normally precluded them from selling on that market. Milwaukee's dealers petitioned the OPA to allow a retail price rise, arguing that without the price increase "the milk supply for the Milwaukee area will be seriously curtailed" if they were forced to deliver milk to consumers at a loss.⁹³ In this case, the OPA granted a retail price increase that pushed the price of milk in Milwaukee up to 13 cents per quart in February 1943. Similar increases were granted in the Chicago, New York, and Duluth-Superior markets. The OPA originally intended these increases to be only temporary means of avoiding shortages in specific markets, but dealers continued to argue that they were "unable to absorb the further

⁹¹ United States Department of Agriculture, *Report of the Secretary of Agriculture* (Washington: GPO, 1943), 149.

⁹² Office of Price Administration, Press Release OPA-1415, Jan. 1, 1942, USDA History Collection, National Agricultural Library, Special Collections, Beltsville, MD, Box 1.2/22, Folder B4; "Milk Pinch Grows," *BW*, Aug. 28, 1943, 29.

⁹³ John C. Weigel (Chicago Regional Administrator, OPA), "Statement of Considerations for Regional Order No. 26," Feb. 1, 1943, Office of Price Administration Records, RG 188, Entry 476, Milk Orders, 1942-46, National Archives II, College Park, MD, Box 4107.

cost increases" of raw milk through the spring and summer of 1943. By November, the maximum retail price of home-delivered milk in Chicago had reached 16 1/2 cents.⁹⁴

These constant increases in price might have led the OPA to force the War Food Administration to dampen consumer demand with rationing, but such action was forestalled when the two agencies reached a compromise. In August 1943 the War Food Administration established dealer quotas in cities facing milk shortages, thereby limiting the amount of fluid milk that dealers could sell in any given month—in other words, rationing. The quotas were pegged to dealers' sales in June 1943, however—the month of heaviest production, when cows were masticating juicy pasture grasses—which meant that the quotas would have little actual effect on supply or demand. Nonetheless, the quota system appeased the OPA, allowing the War Food Administration to proceed with an alternate strategy to put a lid on rising retail prices.⁹⁵ This alternate strategy involved using subsidies to encourage dairy farmers to produce more milk. OPA administrators understood that subsidy payments would do nothing to rein in the rising cost of milk, merely making the federal government, rather than the consumer, pay directly for the increase. Without effective rationing to dampen consumer demand, however, the OPA was forced to side with the War Food Administration in October 1943, helping convince Congress to enact the subsidy program.⁹⁶ With subsidies and price controls in place, the consumer's interest in stable milk prices was thus satisfied, without the need to permanently involve consumer representatives in the politics of milk pricing.

The wartime emergency also limited the power of Teamster milk deliverymen to shape federal milk policies. The establishment of the National War Labor Board in January 1942 created a means for organized milkmen and other unions to gain incremental wage increases, pegged to the rising cost of living as determined by the "Little Steel" formula beginning in July of that year. These concessions to organized labor came in exchange for a "no-strike" pledge that

⁹⁴ Raymond S. McKeough (Chicago Regional Administrator, OPA), "Opinion Accompanying Amendment No. 1 to Order No. G-4," Nov. 12, 1943, Office of Price Administration Records, RG 188, Entry 476, Milk Orders, 1942-46, National Archives II, College Park, MD, Box 4107.

⁹⁵ Russell and Fantin, *Studies in Food Rationing*, 283; USDA, "Action Begun on Milk Marketing Economy Program," Press Release, Jan. 4, 1943, USDA History Collection, National Agricultural Library, Special Collections, Washington, DC, Box 1.2/22, Folder B4.

⁹⁶ *Ibid.*, 282; "Dairy Dilemma," 19.

the nation's trade unions had signed immediately after Pearl Harbor.⁹⁷ For organized milkmen, the wartime labor truce meant that arguments over the "fair price" of milk would be carried out in calm hearings before a tripartite board composed of representatives for Labor, Industry, and the Public—rather than through violent strikes in city streets. As John S. Picago, the Teamsters organizer in the Chicago milk market, informed his compatriots at the Mid-States Dairy Conference in 1943, "the days of shouting and yelling for wage raises are definitely over."⁹⁸ Milkmen gained the support of the federal government in achieving wage increases, but those wage increases were tied to changes in the overall economy rather than to the price of milk in the drivers' local economies.

The Teamsters' power to participate directly in the politics of milk pricing was further constrained by the need to conserve rubber and gasoline during the war. Urban milk delivery at the time relied almost entirely on trucks running on gasoline and pneumatic tires, rather than horse-drawn wagons with steel-rimmed wheels. As a consequence, the milk industry was one of the nation's largest users of two essential wartime commodities. The Office of Defense Transportation (ODT), established in December 1941 to coordinate and conserve the nation's transportation resources, called on transportation expert John L. Rogers of the Interstate Commerce Commission to work with the milk industry to reduce its rubber usage. The International Association of Milk Dealers quickly responded with a plan that some dealers had been considering switching to long before Pearl Harbor: every-other-day delivery. The concept was as simple as it sounds—milkmen would deliver two days' worth of milk to customers on alternating days, allowing milk dealers to consolidate delivery routes and conserve transportation resources. For dealers, daily delivery was a relic of the horse-and-wagon days when pasteurization and bottling of milk had not yet been perfected. In the 1930s, bacteriological research had increased the shelf life of milk, allowing dealers to sell milk in larger containers, less often, thereby using fewer delivery drivers.⁹⁹ John Rogers immediately

⁹⁷ Melvyn Dubofsky, *The State and Labor in Modern America* (Chapel Hill: University of North Carolina Press, 1994), Chapter 7.

⁹⁸ Labor Research Division, Mid-States Dairy Conference, Proceedings, Feb. 26, 1943, IBT Records, Series II, Box 119, Folder 8, p. 18.

⁹⁹ Merrill J. Mack, "Status of Pasteurization of Milk and Milk Products," *American Journal of Public Health* 29, supp. (Feb. 1939): 36-41; Victor Jack Sheifer, "Technological Change and Collective Bargaining: Experiences in the New York Milk-Distributing Industry, 1939-1972" (Ph.D. diss., New York University, 1974), 310-4.

understood that every-other-day delivery could easily reduce milk truck mileage by the 25% percent requested by the ODT, but at the same time he understood that such a plan would require "cooperative action by management and labor."¹⁰⁰ That cooperation would be hard to come by, because the Teamsters knew that every-other-day delivery threatened to cut their membership in half, and so had successfully prevented its use throughout the 1930s.

The ODT's demand for reduced rubber usage provided a pretext for milk dealers to initiate every-other-day delivery with the state's blessing and a proclamation of patriotic duty that could trump labor's objections. Furthermore, dealers could rather truthfully claim that every-other-day delivery would have little impact on driver employment during the war, since consumers had higher incomes and therefore greater demand not only for more milk, but for home-delivered milk rather than store-bought.¹⁰¹ But as Daniel Tobin, president of the International Brotherhood of Teamsters, realized, the institution of every-other-day delivery during the war would likely extend into the postwar period, thereby limiting future enrollment of new drivers or re-enrollment of drivers who had been called to serve in the war. Tobin dictated an immediate response to John L. Rogers upon receiving word of the milk dealers' plans to institute every-other-day delivery, making a thinly veiled threat to break the no-strike pledge: "It may be [that the] fifty percent of the [milk]men who are laid off, without wages, may prevail on the other fifty percent to cease work.... It isn't humanly possible for International officials to prevent men from striking if they feel aggrieved."¹⁰² The situation came to a head in April 1942, when the ODT issued General Order Number 6, calling on milk dealers to reduce monthly mileage in deliveries by 25%, although without dictating any specific method for achieving the reduction. Desperate to prevent dealers from pushing forward with their plans for alternate-day deliveries, the Teamsters passed a resolution at the Mid-West Dairy Conference in May stating their desire to cooperate with General Order Number 6, but through "joint cooperation between management and Labor within the industry itself."¹⁰³ In other words,

¹⁰⁰ John L. Rogers to International Association of Milk Dealers, Mar. 16, 1942, IBT Records, Reel 84. See also "Heat on Milkmen," *BW*, Jan. 24, 1942, 41.

¹⁰¹ Sheifer, "Technological Change and Collective Bargaining," 317.

¹⁰² Daniel J. Tobin to John L. Rogers, Mar. 18, 1942, IBT Records, Reel 84, pp. 1-2.

¹⁰³ H. G. Burger to Thomas Flynn, May 14, 1942, IBT Records, Series II, Box 119, Folder 8.

Teamster locals wanted to preserve their power within local milk markets to bargain directly with dealers, rather than have the conditions of work dictated by state policy.

The Teamsters failed to come up with an alternative to every-other-day delivery, however, and the ODT quickly vetted the dealers' plan to comply with General Order Number 6 by consolidating routes in May 1942.¹⁰⁴ Teamster locals in New York and Chicago announced their intention to strike if necessary to prevent implementation of the plan.¹⁰⁵ The issue was resolved in November 1942 by the National War Labor Board, which mediated a compromise solution. The milk dealers would be allowed to begin the shift to every-other-day deliveries, but could not use the new method to justify laying off milk drivers. Dealers were furthermore encouraged to work with the Teamsters to try alternate methods for reducing mileage, such as eliminating special deliveries to unscheduled stops, limiting deliveries to daylight hours, and using horse-drawn wagons "whenever possible."¹⁰⁶ But when these alternative methods did not reduce milk delivery mileage by the necessary 25%, the ODT issued an amended General Order in May 1943, prohibiting more than four home deliveries per week.¹⁰⁷ New York's Teamsters immediately objected and refused to comply with the order. Once again the issue came before the National War Labor Board; this time, the Board ruled that the Teamsters must allow the dealers to comply with the ODT order requiring every-other-day delivery, but dealers were to maintain full employment of deliverymen. By June 1943, the Teamsters had grudgingly accepted the shift to every-other-day delivery.¹⁰⁸ The federal government negotiated a truce between labor and management in the milk industry, guaranteeing full employment and limited wage increases to the nation's milkmen, but at the ultimate cost of constraining Teamster power within local milk economies.

Federal price control and labor relations policies during the war thus served the interests of the inner-ring milk coalition. Fluid milk farmers and city milk dealers continued to benefit

¹⁰⁴ "Deliveries of Milk Face Cut on June 1," *NYT*, May 24, 1942, 1, 39.

¹⁰⁵ "Strike Threatened by 14,000 Milkmen on Deliveries Cut," *NYT*, May 29, 1942, 1, 10; Labor Research Division, Mid-States Dairy Conference, Proceedings, Feb. 26, 1943, IBT Records, Series II, Box 119, Folder 8.

¹⁰⁶ "Milk Route Peace?" *BW*, Nov. 21, 1942, 112-3.

¹⁰⁷ Sheifer, "Technological Change and Collective Bargaining," 326-7.

¹⁰⁸ *Ibid.*, 329; Associated Milk Dealers, Petition for Review of National War Labor Board Case No. 111-5029-HO, May 18, 1944, National War Labor Board Records, RG 202, Trucking Commission Records, Entry 313, Petitions for Review, 1943-45, National Archives II, College Park, MD, Box 2490, pp. 1-2.

from the milk marketing orders, which essentially excluded cheese dairymen, consumers, and labor from dictating the terms on which a "fair price" would be decided for milk.

The end of the war, however, unleashed all of the old issues of the milk problem with, if anything, even greater intensity than during the days of the milk strikes of 1933-34. Friction between outer- and inner-ring dairy farmers threatened to erupt at the end of the war. In particular, northern and central Wisconsin farmers deep in the outer rings of the Milwaukee and Chicago milksheds began a concerted effort to break into those cities' fluid milk markets, where prices were up to twice as high. The year-long survival of the OPA following the war's end put a temporary lid on this potential re-explosion of the Milk Pool situation of 1933. In February of 1946, the Milwaukee Cooperative Milk Producers, along with Milwaukee's milk dealers, petitioned the OPA to raise the price of milk in the Milwaukee market to match the higher price offered in Chicago. The inner-ring milk coalition had discovered that outer-ring Wisconsin farmers were shipping their milk to Chicago rather than to local processors, with Chicago's high prices offsetting the higher transport costs. The coalition demanded higher farm and retail prices in Milwaukee on three fronts. First, using data requested from agricultural extension agent W. P. Mortenson, the Milwaukee Milk Producers claimed that increases in farm wages and feed costs had doubled the price of producing fluid milk. Second, the Milwaukee milk dealers claimed that their costs had risen due to wage increases granted during the war. Finally, both groups argued that Milwaukee consumers would suffer milk shortages without the increase. The request was granted, ending the diversion of milk from northern Wisconsin to Chicago. Perhaps more importantly, the decision cemented a cooperative relationship among Wisconsin's extension economists, city milk dealers, and inner-ring milk producers—a relationship that would play a key role in postwar efforts to restructure milk marketing.¹⁰⁹

¹⁰⁹ W. P. Mortenson, W. E. Black, and R. K. Froker, Wisconsin Dairy Specialist Marketing Report, 1946, Federal Extension Service Records, RG 33, Annual Narrative and Statistical Reports, Entry 1001 A, National Archives II, College Park, MD (hereafter referred to as RG 33, Entry 1001 A), 1946, Box 420, Marketing Folder, Exhibit A. See also "More Members, More Plants, More Money for Members in 1947," *Pure Milk News* (Mar. 1948): 6-7. The OPA granted price increases to dairy farmers throughout the country. Paul A. Porter to All Regional Administrators, "Milk and Dairy Product Problems for the Year Ahead," Jun. 4, 1946, Office of Price Administration Records, RG 188, Records Relating to the Administration of the Fluid Milk Program, Entry R87, National Archives II, College Park, MD, Box 736, Folder 2.

Like the federal milk marketing orders, the OPA's actions in the year after the war continued to appease the inner-ring milk coalition. Little regard was given to the interests of outer-ring farmers denied the higher prices of fluid markets, consumers who had to pay more for their milk, or Teamsters who demanded wage increases to match the higher prices gained by the city milk dealers. When the OPA was effectively dismantled in July of 1946, however, the cracks in the milk marketing order system widened. The OPA's wartime price controls had allowed constant raises in prices to fluid milk farmers and in dealers' maximum wholesale prices, but had nonetheless restrained the milk coalition from reaping extraordinary profits. After price controls were removed, however, the consumer price of milk shot up rapidly. The Bureau of Labor Statistics announced that milk prices rose by an average of 2.5 cents nationwide after price controls were removed, with increases up to 4 cents occurring in certain cities.¹¹⁰ Consumers became ever more voluble about the rising cost of living, causing accused "milk trusters" such as National Dairy Products to take out advertising campaigns defending themselves as making "far less profit than the public thinks."¹¹¹

The Teamsters, meanwhile, began a strike campaign in 1945 and 1946 to bounce back from the restraints imposed during wartime, seeking to return to daily deliveries. Daily deliveries did not return, however, partly because many rank-and-file milkmen had found that every-other-day delivery brought them higher commissions from customers who ordered greater volumes of milk. Nonetheless, the new round of strikes succeeded in gaining milk drivers hefty wage increases in renegotiated contracts, allowing milkmen to join in the general success enjoyed by organized labor in gaining wage increases immediately after the war.¹¹²

¹¹⁰ "Dairy Prices," *New Republic*, Sep. 16, 1946, 309.

¹¹¹ Advertisement for National Dairy Products Corp., "How Would YOU Lick the High Cost of Living?" 1948, N. W. Ayer Advertising Proofsheets, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Series 2, Box 354, Folder 1; Dairy Prices," *New Republic*, Sep. 16, 1946, 309; "Milk Industry Turns Cautious," *BW*, Nov. 30, 1946, 46-8; "Editorial Views and News," *Milk Dealer* (Oct. 1944): 42-3; C. G. McBride, "Can We Hold War Time Marketing Gains in Post War Adjustments?" *Milk Dealer* (Jan. 1945): 33-4, 94-5; "No Milk Today," *New Republic*, Aug. 2, 1948, 8; Paul L. Coates and Arnold Nicholson, "I Say Milk Costs Too Much," *Saturday Evening Post*, Jan. 1, 1949, 16-7, 67-8.

¹¹² National War Labor Board Trucking Commission, In the Matter of Associated Milk Dealers, Inc., and Milk Wagon Drivers' Union, Local 753, International Brotherhood of Teamsters, Case No. 111-15769-D, Jun. 18, 1945, Bowman Records, Series II, Subseries 4, Box 29, Folder 4; "Milk Every Day?" *BW*, Sep. 22, 1945, 86; "Milk Showdown," *BW*, Oct. 13, 1945, 89-93; "Milk Delivery, How Often?" *BW*, Nov. 3, 1945, 83; "Tripped on Wages," *BW*, Apr. 27, 1946, 98; "Milwaukee Drivers Demand Daily Delivery, Settle for Pay Increase" and "Dairy Farmers, Labor Get Lion Share of Sales Dollar, Survey Reveals," *Milk Dealer* (Jun. 1946): 118; "Labor Aspects of the Chicago Milk Industry," *Monthly Labor Review* 54 (Jun. 1942): 1283-1309. On the general growth of the labor movement after the strikes of 1946-7, see Nelson Lichtenstein, "From Corporatism to Collective Bargaining: Organized Labor and the Eclipse of Social

Meanwhile, outer-ring dairy farmers in Wisconsin began a decades-long effort to organize and break the fluid milk monopoly of the Milwaukee Cooperative Milk Producers and the Pure Milk Association on city fluid milk markets. Manufactured-milk cooperatives such as Badger Consolidated, Lake to Lake Dairy, Wisconsin Creamery, and Wisconsin Cooperative Creameries Association began calling on their farmer members to increase their production of fluid milk, hoping to use sheer volume of production to force their way into city milk markets.¹¹³

Faced with all of this explicit and implicit criticism of the New Deal milk marketing orders in the late 1940s, agricultural economists and engineers in the USDA / land-grant university complex set themselves to solving the milk problem once and for all. Ironically, they helped to construct, over the next twenty years, a revised version of George Boyer's "ideal distribution system." But this time, the system was not to be haunted by the "ghost of socialism."

The Postwar "Ideal Distribution System"

The 1950s and 1960s brought a two-sided technological restructuring of the milk industry. On the consumption end, paper cartons bought in supermarkets replaced the milkman's doorstep glass bottle, effectively making the unionized milkman and his delivery trucks into objects of mere nostalgia. On the production end, the advent and widespread adoption of the bulk hauling system allowed outer-ring dairy farmers to erase the political and economic distinction between manufactured milk and fluid milk. These changes in marketing, encouraged by agricultural economists who sought to permanently solve the milk problem, created, by the early 1970s, a milk economy that left little opportunity for the political disputes that had previously offended John D. Black's sense of "orderly marketing."

Democracy in the Postwar Era," in *The Rise and Fall of the New Deal Order, 1930-1980*, ed. Steve Fraser and Gary Gerstle (Princeton: Princeton University Press, 1989), 122-52.

¹¹³ Minutes of Regular Directors' Meeting of Consolidated Badger Cooperative, Jan. 7, 1949, Feb. 4, 1949, Nov. 4, 1949, Jan. 6, 1950, Aug. 4, 1950, Dec. 30, 1952, Sep. 2, 1953, Consolidated Badger Cooperative Records, Wisconsin Historical Society, Madison, WI (hereafter cited as CBC Records), Reel 2; Audit Report, Wisconsin Cooperative Creameries Association, 1957, Wisconsin Dairies Cooperative Records, Wisconsin Historical Society, Madison, WI (hereafter WDC Records), Box 5, Folder 10; "Resolution Regarding Grade A Milk Marketing Changes," Wisconsin Cooperative Creamery Association, Mar. 9, 1955, *ibid.*; Truman Torgerson, *Building Markets and People Cooperatively: The Lake to Lake Story* (Manitowoc, WI: Lake to Lake Division of Land O'Lakes Inc., 1990), 2-32; "Creamery Grows into Grade A Plant," *Milk Dealer* (Apr. 1955): 54-5, 61-6.

The End of Home Delivery

The Pure-Pak paper carton, introduced by the Ex-Cell-O Corporation in 1936, took several decades to catch on with consumers. This was partly due to a desire by milk drinkers to see the "cream line" that indicated the fat content of the milk held within a glass bottle, and partly due to city and state health ordinances that outlawed paper containers on sanitary grounds.¹¹⁴ In 1940, only 5% of milk was packaged in paper, but by 1952, over 40% came in paper, with most of the shift to paper coming after 1948.¹¹⁵ By 1956, the makers of Pure-Pak felt confident advertising their product on national television as the most convenient package in history.¹¹⁶ Paper cartons were, according to Ex-Cell-O, light and easy for children to handle, disposable (with no need for washing, deposits, or returns), and took up little space in the refrigerator.¹¹⁷ Consumer surveys tended to verify these claims: "Among those families who prefer paper containers [over glass] there is common agreement that the superiority of this milk container stems principally from its greater all-round convenience and time-saving features."¹¹⁸

But whether or not consumers found paper more convenient than glass is probably a moot point, because the convenience of paper for milk distributors was overwhelming. First, even though paper packaging was more expensive than glass, it required no system of returns. (Consumers were notorious for holding on to glass bottles to use for watering plants, holding

¹¹⁴ "Container Conflict," *BW*, Mar. 21, 1936, 16, 19; "Can Paper Come In?" *BW*, Mar. 18, 1939, 14; Advertisement for Thatcher Glass, "Glass Bottles are Best," *Milk Dealer* (Jun. 1953): 32.

¹¹⁵ Sheldon W. Williams, et al., *Organization and Competition in the Midwest Dairy Industries* (Ames: Iowa State University Press, 1970), 40.

¹¹⁶ "How Fast Is the Trend to Paper Containers?" *Milk Dealer* (May 1953): 4-5; Advertisement for Ex-Cell-O Corp., "New Story of Milk: Our Most Perfect Food Now More Conveniently Available than Ever Before," *Milk Dealer* (Apr. 1956): 4-5.

¹¹⁷ "Comparison of Pure-Pak to Old Cans," *Pure-Pak News* (Sep. 1949): 1-2, Warshaw Collection of Business Americana, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Dairy Subject File, Box 3, Folder 12; Advertisement for Pure-Pak Milk Cartons, "The New Story of Milk: A Fresh New Container with Every Quart," *Milk Dealer* (Jul. 1956): 4-5. Of course, all of these claims were also made by the manufacturers of glass bottles, particularly the square ones developed in 1944 by the Thatcher Glass Company. Advertisement for Thatcher Milk Bottles, "Now Is the Time to Ensure Your Postwar Business," *Milk Dealer* (Oct. 1944): 36; Advertisement for Liberty Glass Co., "The Swing is to Liberty's Econotainer," *Milk Dealer* (Oct. 1944): 89. Furthermore, claimed glass bottle makers, milk packaged in glass tasted better and allowed sight of the cream line and an easy way to know when to buy more milk. Advertisement for Duraglas Dairy Containers, "Milk's Delicate Flavor Is Protected in Glass," *Milk Dealer* (Jul. 1946): 10; Advertisement for Duraglas, "Glass Packages for Dairy Products," *Milk Dealer* (Jun. 1953): 16-7; Advertisement for Liberty Glass Co., "Only Glass Bottles Tell the Inside Story," *Milk Dealer* (Oct. 1954): 215.

¹¹⁸ Clyde W. Park, ed., *Milk Packaging for Retail Distribution: Report of a Controlled Experiment* (Cincinnati: A. H. Pugh, 1956), 62.

flowers, and so on).¹¹⁹ Furthermore, paper did not need to be washed, would not break, and, when flat, took up one-tenth as much valuable floor space in the milk plant.¹²⁰

But even more important than any of this was the fact that paper packaging helped expand the marketing range of large milk dealers. Prior to the mid-1950s, milk dealers tended to be located in the heart of a city or town, with most of their customers residing within a few miles from the milk plant. One important reason for this was that glass bottles would break in transit. Dealers were willing to accept a certain amount of breakage as the cost of doing business, but a generally accepted rule of thumb in the early 1950s was that any trip longer than 40 miles caused too much breakage. The cost of replacing the bottles wiped out any potential profits to be made on the unbroken containers.¹²¹

Paper milk cartons were shatterproof, but expensive to assemble. The large amounts of capital required to purchase paper packaging machinery meant that the companies who converted to paper were also the largest. In Wisconsin in May of 1952, for instance, there were 41 milk dealers with paper packaging facilities (out of 459 total dealers in the state). For the plants who did not package in paper, the average volume of milk bottled daily was 851 quarts; but for those who did package in paper, the average was 21,350 quarts per day.¹²² With such high volumes of milk, companies were forced to seek sales outlets far outside their own city or town limits. In May of 1952, Wisconsin paper milk dealers shipped their packaged milk as far away as 278 miles from the plant, with most dealers extending their sales routes 50 miles outside city limits.¹²³ Suburban and small-town milk dealerships either had to install their own paper packaging machinery to compete, or simply drop out of the market.¹²⁴ Those milk dealers who were most successful in making the shift to paper packaging were those who relocated their

¹¹⁹ Gus Rothe, "Bottle Recovery Drive," *Milk Dealer* (Jan. 1945): 30-1, 68.

¹²⁰ A. Maurice Davis, et al., "Packaging," *Milk Dealer* (Jul. 1962): 39-40.

¹²¹ Hugh L. Cook, *Paper Packaged Milk in Wisconsin: Its Part in Expanding Distribution Areas* (Madison: University of Wisconsin Agricultural Experiment Station, 1953), 24. See also *Outer-Market Distribution of Milk in Paper Containers in the North Central Region* (Lafayette, IN: Purdue University Agricultural Experiment Station, 1953).

¹²² Cook, *Paper Packaged Milk*, 3, 7, 10-11.

¹²³ *Ibid.*, 12.

¹²⁴ "Meeting Competition with Paper," *Milk Dealer* (Jan. 1954): 68, 90.

plants from the high-rent downtown districts to small towns where taxes, workers, and land costs were all much cheaper.¹²⁵

The trend to paper accelerated in the late 1950s, encouraged by economists in the USDA's Agricultural Marketing Service who realized its potential for diminishing the milk problem. Like George Boyer of the Milwaukee Milk Survey twenty years before him, John C. Winter of the Agricultural Marketing Service recognized the political and economic importance of distribution costs. "In recent years," wrote Winter to his supervisor in 1957, "the marketing margin has exceeded the farm value of milk. A large share of the marketing margin consists of packaging and related costs."¹²⁶ As an employee of the USDA, Winter's primary duty was to devise and implement methods for raising farmers' incomes. However, as Winter recognized, this would be impossible to achieve without raising the cost of milk to consumers if the cost of distribution continued upward. Winter proposed to the Dairy Advisory Committee of the Agricultural Marketing Service, in the fall of 1956, a project to develop "cheaper containers"—paper cartons that would require less skilled handling, less expensive manufacturing, and less transportation expense.¹²⁷ Importantly, the members of this committee included representatives from national milk distributors, inner-ring dairy farmer cooperatives, and academic economists—no consumers, Teamsters, or outer-ring dairy farmers present. This committee, which had been given Congressional authority to approve, disapprove, or prioritize the milk marketing projects of the USDA, pushed Winter's "cheaper containers" project to top priority in 1957.¹²⁸ In other words, the most powerful actors in the milk economy agreed that cheaper paper containers were a politically acceptable method for redistributing milk money to farmers.

One of the main reasons the paper carton project was so appealing to this milk coalition was its implications for reducing the strength of the Teamsters in the milk industry.¹²⁹ After the

¹²⁵ Cook, *Paper Packaged Milk*, 12-17; Faye Henle, "Diversified Dairies: The Search for Greener Pastures Is Paying Off," *Barron's*, Apr. 22, 1957, 11-3; Golden Guernsey Dairy Cooperative, "The Heart of Golden Guernsey Dairy Cooperative ... Let's Get Acquainted," n.d. (1960s), Golden Guernsey Records, Box 1, Folder 1, p. 4.

¹²⁶ J. C. Winter to B. A. Holt, "Submission of Progress Report and Proposal," Sep. 9, 1957, RG 136, Transportation and Facilities Research Division Subject Files, Entry 42 (hereafter Entry 42), Box 1, Folder 8.

¹²⁷ "Progress Report on Research and Related Services Applicable to Dairy," Oct. 1957, RG 136, Entry 42, Box 1, Folder 8, pp. 125-6.

¹²⁸ Budd A. Holt to W. C. Crow, W. H. Elliott, R. W. Hoecker, and J. C. Winter, "Priorities on Branch Proposals by Dairy Research and Marketing Advisory Committee," Feb. 13, 1957, RG 136, Entry 42, Box 1, Folder 8.

¹²⁹ Sheifer, "Technological Change and Collective Bargaining," 104-19.

successful organizing drives of the late 1930s and 1940s, the Teamsters essentially controlled the delivery of bottled milk in every major city in the Midwest and Northeast. Within the dairy industry, their greatest membership strength lay in the vast numbers of milkmen who delivered milk door-to-door. A 1952 Bureau of Labor Statistics report, for instance, found that one-third of the dairy employees in the country were strongly organized driver-salesmen.¹³⁰ Dealers had successfully retained the every-other-day delivery system begun during World War II, but after the war sought to further limit the Teamsters' power to dictate business practices.¹³¹ By the early 1950s, at least one major Chicago dairy had reduced deliveries further still, employing drivers only during weekdays.¹³² Paper packages, particularly if they could be bought more cheaply, offered dealers a chance to entirely eliminate Teamster control over the terms of milk delivery. Since the vast majority of paper deliveries were to suburban supermarkets and convenience stores, dealers could contract with independent over-the-road truckers to deliver their milk, or allow the supermarkets to take care of the delivery themselves with non-union drivers.¹³³

This shift to "dock deliveries" or "drop shipments," as they were known in the industry, was rightly interpreted by the Teamsters as an effort by supermarkets and large milk dealers to diminish the union's core membership.¹³⁴ Milkmen in trim white uniforms, the familiar public faces of the milk industry since the late nineteenth century (**see Figure 2.1**), were being slowly replaced by non-organized truckers hauling trailer loads of milk cartons to the rear docks of supermarkets for straight hourly wages.¹³⁵ The Teamsters Mid States-East Coast Dairy

¹³⁰ A. N. Jarrell, "Milk-Dealer Industry: Earnings in Late 1951 and Early 1952," *Monthly Labor Review* 75 (Oct. 1952): 422-3; "Who Are the Teamsters? From Groceries to Girders, They Haul Everything," *U.S. News and World Report*, Mar. 8, 1957, 134-7. One author estimated there were 170,000 milk deliverymen in 1941. Robert A. Wilkinson, "Wanted: More Milk," *Atlantic Monthly*, Jan. 1941, 64.

¹³¹ C. G. McBride, "Can We Hold War Time Marketing Gains in Post War Adjustments?" *Milk Dealer* (Jan. 1945): 33-4, 94-5.

¹³² Officers and Directors of the Bowman Dairy Company to Members of the Bowman Team, "The Five-Day Week in the Milk Business," Oct. 4, 1951, Bowman Records, Series II, Subseries 4, Box 30, Folder 6. Week-long home delivery in Milwaukee lasted slightly longer, into the mid 1960s. Golden Guernsey Dairy Cooperative, *Annual Report*, 1957, and *Annual Report*, 1969, Gavin McKerron, Wisconsin Historical Society, Madison, WI, Box 1, Folder 6; Golden Guernsey Dairy Cooperative, *Annual Report*, 1969, Gavin McKerron Records, Wisconsin Historical Society, Madison, WI, Box 1, Folder 6.

¹³³ Williams, et al., *Organization and Competition*, 33; Wisconsin Division of Economic Practices, "Retail Store Handling," *Milk Dealer* (Oct. 1963): 14.

¹³⁴ Central Conference of Teamsters, Minutes of Dairy Division Meeting, Sep. 23, 1958, Chicago, IL, IBT 695 Records, Box 4, Folder 10; "Editorial Views of the News: A 'John Lewis Philosophy'," *Milk Dealer* (Apr. 1955): 42-3.

¹³⁵ Central Conference of Teamsters, Minutes of Dairy Division Meeting, Nov. 5, 1959, Detroit, MI, IBT 695 Records, Box 4, Folder 10; Edward Thom, "What about Dock Delivery?" *Milk Dealer* (Apr. 1959): 46-7, 54-8; "Milkmen Reduce Home Milk Price to Bolster Retail Deliveries," *Milk Dealer* (Sep. 1954): 98; "Trend toward Wholesale," *Milk Dealer* (Jun. 1955): 18.

Conference, recognizing the implications of the trend in 1959, called upon Teamster President Jimmy Hoffa to put the combined strength of the region's organized dairy, warehouse, and chain store workers to the task of ending the "drop-load delivery system."¹³⁶ There was little hope for effective union resistance, however. All too often, the best the union could do was bargain for a limit to the rate of expansion of the dock delivery system.¹³⁷ Milk dealers in the 1950s saw their profits being steadily squeezed by supermarket demands for large volumes of milk at low prices, making home delivery routes seem increasingly expensive to maintain.¹³⁸ To rid themselves of the trouble, large milk dealers began offering their home delivery drivers unbeatable deals on used trucks and exclusive rights to delivery routes, thereby turning milkmen into independent salesmen-contractors rather than organized employees.¹³⁹ Jimmy Hoffa decried this maneuver as an effort to create a "phony façade of small business enterprise" among milk deliverymen, but milkmen often saw the chance to establish their own milk route at low cost as irresistible.¹⁴⁰ The only other option—to go on strike—risked alienating home delivery customers. New York City Teamsters discovered this during a two-week strike in late 1961. Although the drivers won their wage concessions, ten percent of home delivery routes in the city were permanently cancelled when angry customers decided it would be easier to deliver the milk themselves from the store to the refrigerator.¹⁴¹

¹³⁶ Frank J. Gillespie to James R. Hoffa, "Committee on Wholesale Fluid Milk Chain Store Warehouse Delivery," Feb. 20, 1959, IBT 695 Records, Box 12, Folder 8.

¹³⁷ Abraham Weiss (Director of Research, IBT) to Teamster Locals Having Contracts in the Fluid Milk Industry, "Provisions in Teamster Dairy Contracts Dealing with Dock Delivery or Platform Pick-Up," Jan. 1962, IBT 695 Records, Box 28, Folder 8; Donald Eaton (Pres., Teamsters Local 695) to Homer Williams (Manager, Borden Co., Wern Farms Branch), Dec. 22, 1961, IBT 695 Records, Box 28, Folder 8.

¹³⁸ Donald E. Hirsch, "Ways of Lowering Milk Distribution Costs," *Milk Dealer* (Jul. 1953): 65-72; Roland W. Bartlett, "Future Trends in the Dairy Industry," *Milk Dealer* (Jan. 1954): 124-36; "Pay Cuts of up to \$10,000 per Year," *Milk Dealer* (Dec. 1960): 6; "Buy Union Milk," *BW*, Jun. 17, 1950, 122; Wisconsin Department of Agriculture, Division of Economic Practices, "Report to the Wisconsin Senate," Apr. 24, 1963, RG 136, Entry 26, Box 30.

¹³⁹ Fred De Armond, "Salesmen and/or Teamsters," *Milk Dealer* (Jul. 1956): 54, 86-94.

¹⁴⁰ James R. Hoffa to All Central Conference of Teamsters Local Unions, Jul. 16, 1959, IBT 695 Records, Box 70, Folder 19; James R. Hoffa to All Central Conference of Teamsters Dairy Locals, Nov. 29, 1961, *ibid.*, Box 4, Folder 10.

¹⁴¹ "The New York Milk Strike: A Study in Futility," *Milk Dealer* (Feb. 1962): 44, 74; Stanley Levey, "Milk Deliveries Cut off by Strike," *NYT*, Oct. 26, 1961, 1; Paul Potter, "Dairy Industry Labor Trends, Patterns," *Milk Dealer* (Jul. 1962): 48-9, 112-4.



Figure 2.1: Borden Milk Company Deliverymen

Milkmen, such as these drivers photographed in Milwaukee in 1948, were salesmen as well teamsters; clean white uniforms were part of the job of being the public face of the milk industry as well as a driver of a delivery vehicle. Wisconsin Historical Society, WHi 31172.

Paper cartons hastened the decline of home delivery not only by circumventing the Teamsters but also by solidifying the role of supermarkets in selling milk. In Wisconsin in 1952, only "a very few dealers" sold milk primarily to supermarkets or stores; well over half of the volume of milk deliveries was still directly to homes.¹⁴² However, as the cost of installing paper packaging equipment forced milk dealers to increase their sales volume and expand their marketing range, supermarkets became increasingly attractive customers. By 1954, the Milwaukee Journal's annual consumer survey reported that for the first time, more than half of Milwaukee consumers bought their milk at grocery stores.¹⁴³ This was largely due to the fact that the store price of milk was rapidly dropping below that of home delivered milk.

¹⁴² Cook, *Paper Packaged Milk*, 6; "Survey Reveals Information on Store Distribution," *Milk Dealer* (Jul. 1946): 66.

¹⁴³ "Skimmed from the News," *Milk Dealer* (May 1954): 30.

The reasons for this comparative drop in store milk's price were multiple, but were mostly rooted in an effort by supermarket managers to increase store traffic.¹⁴⁴ Finding that customers made regular trips to the supermarket to stock up on low-cost staples like milk and bread, store managers used cheap milk to lure customers into buying more expensive items while in the store. Small milk dealers resisted supermarkets using milk as a "loss leader," and were particularly unhappy about having to give supermarkets secret rebates in order to assure shelf space and prominent display of their products.¹⁴⁵ Nonetheless, there was little that the small milk dealers could do to stop this trend, particularly once they had invested in paper packaging machinery.¹⁴⁶ As supermarkets strengthened their position in food marketing in the 1950s, keeping milk dealers in line could be accomplished by threatening to take over milk distribution entirely, as Kroger, A & P, and Safeway all did at various times.¹⁴⁷

Those milk dealers who wanted to stay in business in the 1950s were forced to accept the lower profit margins of store delivery. Surviving required further increases in sales volume, and as a consequence, only the largest dairies were able to "ride the tiger" of the new milk distribution system.¹⁴⁸ Bowman Dairy Company, for example, as one of the largest milk dealers serving the Chicago area, decided in 1956 to increase its rebates to large chain stores such as A & P to 16%, keeping its discount for independent grocers at 11.5%. In 1960 Bowman outlined a plan for a long-term commitment to providing chain stores with an increased volume of milk,

¹⁴⁴ Also contributing were the repeal by states of minimum price-fixing laws in the 1950s; see, e.g.: "Milk Hike Rumpus," *BW*, Jan. 13, 1951, 52-4; "Milk Pricing: Housewives Pay for Outmoded Controls," *Time*, Dec. 13, 1954, 88; "Milk Marketing," *Consumer Reports*, Aug. 1955, 381-3.

¹⁴⁵ Anonymous to the Editor, "Store Rebates," *Milk Dealer* (Dec. 1958): 37; "Editorial Views of the News: The Hand that Rocks the Cradle," *Milk Dealer* (Dec. 1958): 41; A Wisconsin Milk Dealer to the Editor, "Unfair Competition," *Milk Dealer* (Apr. 1960): 164; "Indianapolis Milkmen 'Mass-Shopped'," *Milk Dealer* (Oct. 1960): 10.

¹⁴⁶ Setting up outdoor milk vending machines was one popular alternative in the mid-1950s, especially since "mechanical milkmen" neither asked for pay raises nor caused significant competition to supermarkets (since they were primarily patronized by suburban commuters during evening hours when stores were closed). "Selling the Suburbanite," *Milk Dealer* (Oct. 1954): 108, 115; "Outdoor Milk Vending on a Supermarket Parking Lot," *Milk Dealer* (Nov. 1955): 82-3; Morris Auerbach, "Mechanical Milkmen," *Milk Dealer* (Oct. 1954): 104-6; Advertisement for Rowe Outdoor Milk Merchandiser, "Dairies Everywhere Are Buying This 24 Hour Mechanical Milkman," *Milk Dealer* (Oct. 1954): 13; "Highest Vending Sales Ever," *Milk Dealer* (Oct. 1954): 62-3, 161-6.

¹⁴⁷ Central Conference of Teamsters, Minutes of Dairy Division Meeting, Sep. 23, 1958, Chicago, IL, IBT 695 Records, Box 4, Folder 10; Fred De Armond, "Will Route Selling Become Outmoded?" *Milk Dealer* (Apr. 1962): 44, 76-80; Franklin C. Strong, "Wholesale Business—Where Is It Going?" *Milk Dealer* (Mar. 1964): 48-9, 56-8; D. I. Padberg, "Changes in Competition," *Milk Dealer* (May 1964): 41, 73-4.

¹⁴⁸ Don Merlin, "The Milk Industry Rides a Tiger," *Milk Dealer* (Dec. 1960): 24-5, 69; Hugh L. Cook, Harlow W. Halvorson, and R. Wayne Robinson, *Costs and Efficiency of Wholesale Milk Distribution in Milwaukee* (Madison: University of Wisconsin Agricultural Experiment Station, 1956).

with dock delivery costs to be split between the dealer and the chains.¹⁴⁹ Small milk distributors had little power to resist this collusion between supermarkets and large dealers. Between 1950 and 1962, the number of milk dealers serving city markets declined by half in the United States and by over 60% in the North Central region. Most dealers going out of business were small firms.¹⁵⁰

By the early 1960s, then, a new form of "orderly marketing" had taken firm shape on the distribution end of the milk industry. With the low retail prices offered by supermarkets, consumer resistance to the price of milk essentially disappeared.¹⁵¹ The Teamsters, who had briefly posed the most serious threat to the stability of milk marketing achieved by the USDA in the late 1930s, were increasingly becoming non-players in the milk pricing game. The desperation of the Teamsters' position was illustrated in October 1960, when 40 Indianapolis milkmen invaded a supermarket, commandeering shopping carts and jamming aisles to protest the store's policy of underselling home-delivered milk by 28 cents per gallon.¹⁵² For an organization that had achieved its strength in the dairy industry through hard-headed organizational drives, the episode was a sad commentary on the Teamsters' growing inability to gain sympathy from consumers, management, or government arbitrators.¹⁵³

The only major fault line left in the decades-old milk problem was that between outer-ring and inner-ring dairy farmers. The widespread adoption of the bulk tank, vigorously encouraged by agricultural extension agents and economists, would help to eliminate this final point of contention.

¹⁴⁹ "Bowman Chain Store Marketing Organization," Feb. 1, 1960, Bowman Records, Series II, Subseries 4, Box 30, Folder 6. See also "Borden Wholesale," notes for contract negotiation meeting, n.d. (Apr. 1962?), IBT 695 Records, Box 70, Folder 8; Borden Company, Wisconsin Milk and Ice Cream Division, "Memo on Institutional Rebate System," Oct. 1, 1958, *ibid.*, Box 70, Folder 8.

¹⁵⁰ "News Report: The Number of Dealers Serving City Milk Markets," *Milk Dealer* (Apr. 1965): 24; Williams, et al., *Organization and Competition*, 92.

¹⁵¹ "Milk Marketing," *Consumer Reports*, Aug. 1955, 381-3.

¹⁵² "Indianapolis Milkmen 'Mass-Shopped'," *Milk Dealer* (Oct. 1960): 10.

¹⁵³ Thaddeus Russell, *Out of the Jungle: Jimmy Hoffa and the Remaking of the American Working Class* (New York: Knopf, 2001).

The Bulk Tank System

Well into the 1950s, most farmers in the Midwest and Northeast stored their raw milk in 10-gallon cans before a milk hauler arrived to transfer it to a tank truck. Since the late 19th century, cans had effectively and inexpensively kept milk free from dirt and other foreign matter. However, full milk cans weighed about 115 pounds, requiring time-consuming, back-breaking labor to be transferred to a truck for hauling to the dairy plant (see **Figure 2.2**).¹⁵⁴ As a consequence, milk truck drivers were limited in the number of farms they could visit on any given day, and were also limited in the distance they could travel to pick up milk. Furthermore, because the glass-lined milk cans provided only minimal thermal insulation, they required daily pick-ups, further increasing the cost of transportation.¹⁵⁵ The cost of transporting milk to the plant, as John D. Black had correctly pointed out in 1935, created a spread between the prices that dairy plants paid to inner-ring and outer-ring dairy farmers. Bulk tanks offered a means of breaking down this barrier.¹⁵⁶

Bulk tanks, first used on California dairy farms in the late 1930s, were not a particularly complex technology. Via the milking machine pumps attached to cows' udders, they simply gathered raw milk and brought it down to a bacteria-discouraging temperature of 40° F. The term "bulk" was apt, since the stainless steel tanks could hold anywhere from several hundred to several thousand gallons—generally the equivalent of two or more days' worth of milkings.¹⁵⁷ The great advantage of the system was its simplification of the farm-to-plant transportation process. A milk hauler need only attach a suction hose between the truck tank and the farm tank, making for quick and easy milk transfers. Bulk tanks allowed bigger trucks operated by fewer drivers to visit more farms spread out over longer distances (see **Figure 2.3**).

¹⁵⁴ Charles E. Miller, "Hauling Memories Recalled," *Modern Milk Hauler* (Jul. 1968): 14-5; Douglas Harper, *Changing Works: Visions of a Lost Agriculture* (Chicago: University of Chicago Press, 2001), 236-7.

¹⁵⁵ E. J. Finneran, "From Cow to Kitchen," *Nation's Business*, Jun. 1937, 24-6, 169-72; John Schultz, Milk Hauling Contract, Feb. 25, 1931, AMPI Records, Box 1, Folder 5.

¹⁵⁶ Donald B. Agnew, *How Bulk Assembly Changes Milk Marketing Costs* (Washington: USDA, Agricultural Marketing Service, 1957).

¹⁵⁷ Minutes, Board of Directors Meeting, Consolidated Badger Cooperative, May 2, 1958, CBC Records, Reel 2; F. J. Keilholz, "Put Down that Milk Can!," *Country Gentleman*, Dec. 1954, 36-7, 58.

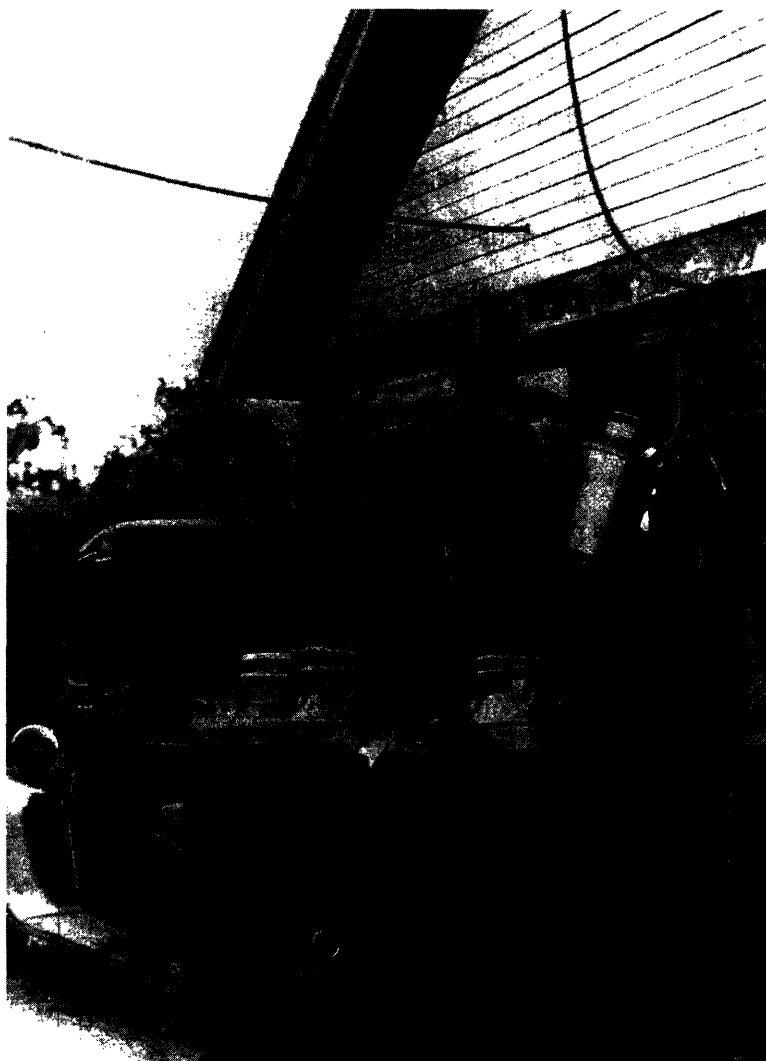


Figure 2.2: Milk hauler unloading cans at receiving station

A farmer in the early 1930s drove his own truck filled with milk cans to a local dairy plant's receiving station. This backbreaking task was a daily feature of dairying at the time. Wisconsin Historical Society, WHi 31171.



Figure 2.3: Bulk milk truck

Bulk milk trucks, such as this one parked in a farm yard near Madison, Wisconsin in the late 1950s, replaced milk cans and fundamentally altered the geography of dairying. Wisconsin Historical Society, MJS-31170.

The system was consequently touted by both dairy plant managers and agricultural economists as a way to reduce transport costs.¹⁵⁸ Secretary of Agriculture Ezra Taft Benson, an economist trained at Iowa State, hailed the system in 1953 as a "direct pipe line" from the cow to the dairy that would markedly "reduce the cost of marketing dairy products."¹⁵⁹ Economists, dairy plant managers, and farm journalists envisioned the system increasing the volume of milk

¹⁵⁸ Donald E. Hirsch, "Ways of Lowering Milk Distribution Costs," *Milk Dealer* (Jul. 1953): 65-72; Joseph M. Cowden, *Farm-to-Plant Milk Hauling Practices of Dairy Cooperatives* (Washington: Farm Credit Administration, USDA, 1952); Joseph M. Cowden, *Comparing Bulk and Can Milk Hauling Costs* (Washington: USDA, Farmer Cooperative Service, 1956).

¹⁵⁹ Kenneth Sanders, "What's the Outlook for the Bulk Tank Pick-Up System?" *Milk Dealer* (Aug. 1953): 38; "Challenge for Dairymen," *Time*, Mar. 30, 1953, 15. On Ezra Taft Benson, see Edward L. Schapsmeier and Frederick H. Schapsmeier, *Ezra Taft Benson and the Politics of Agriculture: The Eisenhower Years, 1953-1961* (Danville, IL: Interstate Printers and Publishers, 1975).

produced, thereby increasing farm incomes without a corresponding rise in consumer price.¹⁶⁰ For milk plants needing large volumes of cheap but sanitary milk to satisfy their supermarket contracts, the bulk tank system eventually became a necessity. Major milk processors, such as Consolidated Badger in Wisconsin (bottlers of "Morning Glory" milk products), began to require farmers to install bulk tanks on their farms in the mid-1950s.¹⁶¹

At first, many farmers were unconvinced that installing a bulk tank would help them earn more money without raising the price of milk to consumers. For one thing, bulk tanks were expensive. In 1956, a 200 gallon tank that would hold only one day's worth of milkings during the flush season cost from \$1800 to \$2500.¹⁶² Not only were the stainless steel tanks expensive in themselves, but their operation required extensive remodeling and rewiring of barns. Especially in the outer rings of milksheds, farmers had never needed to make major investments in cooling equipment, usually placing their cans in spring water to keep milk cool until the milk hauler arrived. Thus, their barns usually lacked the separate milkhouse needed to house the giant electric cooling tanks.¹⁶³ Even more importantly, justifying the expense of the bulk tank system required investment in larger cattle herds to boost production enough to fill the tank regularly.¹⁶⁴ This was a major cost, since dairy cattle of the 1950s were more expensive than ever before, having recently been subjected to scientific breeding programs that dramatically increased yields.¹⁶⁵ Consequently, as late as 1956, only 45% of Milwaukee area milk producers had converted, and only 40% of Chicago producers had done so.¹⁶⁶ Those who did make the switch were the bigger farmers who could more easily secure loans from a bank.

¹⁶⁰ "Progress Report on Research and Related Services Applicable to Dairy," Oct. 1957, RG 136, Entry 42, Box 1, Folder 8, pp. 120-1; D. Hanson, "Less Work, More Profits with Milk Tanks," *Successful Farming*, Aug. 1952, 46-7, 76, 78, 80-1; C. W. Gifford, "Bulk Milk Tanks, Dairymen Like 'Em," *Farm Journal*, Jun. 1953, 36-7, 127.

¹⁶¹ Advertisement for Mojonier Bulk Milk System, "All about Bulk Milk," *Milk Dealer* (Jun. 1953): 35; Ronald J. Carson, "Farm Bulk Cooling Tanks for the Small Producer," *Milk Dealer* (Apr. 1959): 44, 78-80; Minutes, Board of Directors Meeting, Consolidated Badger Cooperative, Dec. 14, 1956, CBC Records, Reel 2; Madison Milk Producers' Association Board of Directors, Newsletter, May-Jun., 1955, AMPI Records, Box 1, Folder 3; Minutes, Board of Directors Meeting, Wisconsin Cooperative Creamery Association, Nov. 3, 1955, WDC Records, Box 5, Folder 2; Minutes, Board of Directors Meeting, Wisconsin Creamery Company Cooperative, Sep. 4, 1957, WDC Records, Box 4, Folder 5.

¹⁶² Dennis H. Murphy, "Around Chicago, Milk's Going Bulk," *Milk Dealer* (Aug. 1956): 44-5, 57-8; Jacques V. Hopkins, "Too Much Milk," *Nation*, Sep. 8, 1956, 198-200.

¹⁶³ "Selling Producers on the Farm Bulk Tank System," *Milk Dealer* (Jan. 1954): 58-61, 86.

¹⁶⁴ "Will a Bulk Tank Pay?" *Farm Journal*, Oct. 1955, 60-2.

¹⁶⁵ Harper, *Changing Works*, 216-9.

¹⁶⁶ "Bulk Tank Milk Now 45% of Milwaukee Market," *Milk Dealer* (Jun. 1956): 148.

But the dream of a "direct pipeline" would only come true if every farmer shipping to a dairy installed the system. Otherwise dairies would have to send out both bulk and can hauling trucks, making a partial conversion even more expensive than maintaining the old can system alone.¹⁶⁷ To encourage complete conversion, dairy cooperatives such as Consolidated Badger turned to extension agents at the University of Wisconsin to help them convince farmers of the need to increase milk volumes.¹⁶⁸ The most effective method, extension agents argued, was to offer low- or no-interest loans and a premium payment to farmers who made the conversion.¹⁶⁹ Dairy farmers who wanted to continue shipping their milk to a dairy were offered an irresistibly higher price for their product, if only they would put themselves in debt to dramatically boost their herd size and install expensive marketing machinery on their own farms. By 1958, over 11,000 Wisconsin farmers had installed tanks, up from only 30 farmers in 1952 and up from 3,500 in 1956.¹⁷⁰

This ramp-up in the volume and expense of milk production led to a dramatic shift in the geography of Midwestern dairy farming. In the first half of the twentieth century, thousands of outer-ring dairy cooperatives populated the Wisconsin countryside, with small plants processing farmer-members' raw milk and cream into cheese, butter, and evaporated milk. Fundamentally different from large inner-ring fluid milk cooperatives such as the Milwaukee Cooperative Milk Producers and the Pure Milk Association, these cooperatives were rural, local institutions, often having no more than a few dozen members. Mottoes such as "Co-Operatives are the Small Man's Means of Doing Big Things" indicated the rooting of these enterprises in the agrarian

¹⁶⁷ Minutes, Special Board of Directors Meeting, Wisconsin Cooperative Creamery Association, Jul. 22, 1954, WDC Records, Box 5, Folder 1.

¹⁶⁸ Karl Shoemaker, Wisconsin Dairy Marketing Specialist Annual Report, 1953, Federal Extension Service Records, RG 33, Entry 1001 A, Box 454, Marketing Folder; Karl Shoemaker, Wisconsin Dairy Marketing Specialist Annual Report, 1955, *ibid.*, Box 429, Marketing Folder; Hugh Moore, Wisconsin Dairy Marketing Specialist Annual Report, 1957, *ibid.*, 1957, Box 427, Marketing Folder; Minutes, Board of Directors Meeting, Consolidated Badger Cooperative, Sep. 7, 1954, CBC Records, Reel 2.

¹⁶⁹ Minutes, Board of Directors Meeting, Consolidated Badger Cooperative, Apr. 2, 1954, CBC Records, Reel 2; Minutes, Board of Directors Meeting, Wisconsin Creamery Company Cooperative, Oct. 2, 1957, WDC Records, Box 4, Folder 5; Minutes, Special Board of Directors Meeting, Wisconsin Creamery Company Cooperative, Jan. 7, 1959, WDC Records, Box 4, Folder 5; Minutes, Board of Directors Meeting, Pure Milk Association District 2, Nov. 26, 1956, PMA Records, Box 1, Folder 2.

¹⁷⁰ "Farm Bulk Tanks Featured at Wisconsin State Fair," *Milk Dealer* (Aug. 1956): 112; "Farm Bulk Milk Tank Cooling Expanding Fast, Survey Shows," *Milk Dealer* (May 1956): 164-5; "Farm Tank Installations up 30% over 1958," *Milk Dealer* (Aug. 1959): 44. The conversion to bulk tanks would not become universal until the late 1960s. See "Bulk Handling: Unfinished Revolution," *Milk Dealer* (May 1962): 38-9; Chris Anastos, "A Second Look at Bulk Handling," *Milk Dealer* (Mar. 1964): 30, 65.

cooperative movement of the early twentieth century.¹⁷¹ For example, the Hillpoint Cooperative Creamery Association was established in 1904 in the village of Hillpoint, Wisconsin, approximately 150 miles west-northwest of Milwaukee. Begun by seven farmers looking for a market for their milk, the Hillpoint Cooperative served only twenty-five farmers in its first decade of operation, processing their cream into butter and skim milk into powder. The members made only conservative capital investments in the plant, with the democratic setup of the cooperative's decision-making structure encouraging each member to keep his share of the profits for himself. As the cooperative grew through the 1940s, it expanded its operations slightly, buying an evaporated milk plant from the Nestle Company in the larger town of Reedsburg in 1946. Even with this expansion, the cooperative shared in only a minute fraction of the market for manufactured dairy products, competing with thousands of similar cooperatives in the state.¹⁷²

With the arrival of the bulk tank system in the 1950s, agricultural extension economists began to view small cooperatives like Hillpoint as unnecessary contributors to the continuing milk problem. Extension agents such as Truman F. Graf, a marketing economist at the University of Wisconsin, began to advocate a wholesale "dairy reorganization" to help outer-ring farmers "[do] a better job of marketing their milk and aid them in obtaining a higher price for their products."¹⁷³ The aim of this "dairy reorganization" plan was the consolidation of small outer-ring cooperatives into much larger cooperatives, with all farmers upgrading their herds and barns to meet public health standards, allowing them to produce milk for both manufacturing and fluid use.¹⁷⁴ Small farmers who had been producing only Grade B milk now

¹⁷¹ Hillpoint Co-Operative Dairies, Financial and Operating Statement, 1959, WDC Records, Box 3, Folder 3. On the rural cooperative movement of the early 20th century, see Hal S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930* (Chapel Hill: University of North Carolina Press, 1997), 107-52.

¹⁷² "History of Hillpoint Co-Operative Dairies," in Hillpoint Co-Operative Dairies, Financial and Operating Statement, 1953, WDC Records, Box 3, Folder 3.

¹⁷³ Truman Graf, Wisconsin Dairy Marketing Specialist Annual Report, 1956, RG 33, Entry 1001 A, 1956, Box 423, Marketing Folder, pp. 2-3. See also Hugh L. Cook, "Reorganization of Cooperatives and Facilities in the Chicago Milk Shed," in *Proceedings of Proposals for Reorganization of Dairy Cooperatives*, University of Wisconsin, Madison, WI, Feb. 11, 1967, AMPI Records, Box 2, Folder 9.

¹⁷⁴ Truman Graf, "Bulk Tanks Bring Long Term Benefits," *Wisconsin Agriculturist and Farmer* (Mar. 7, 1959); Karl Shoemaker, Wisconsin Dairy Marketing Specialist Annual Report, 1954, RG 33, Entry 1001 A, 1954, Box 539, Marketing Folder.

had to join with inner-ring farmers in producing Grade A milk, or give up farming entirely.¹⁷⁵ To implement this consolidation, Graf and his extension colleagues offered legal services and marketing studies to the three most powerful outer-ring cooperatives in the state—Lake to Lake, Badger Consolidated, and Wisconsin Dairies.¹⁷⁶

These large cooperatives began aggressively absorbing their smaller competitors in the 1950s and 1960s. Most commonly, cooperatives like Wisconsin Dairies would lure away a smaller organization's best producers by offering a higher price for their milk. Directors of small cooperatives like Hillpoint, seeing their most productive members flocking to the larger organizations, faced a "choice" between losing the majority of their milk supply or merging with the larger coop.¹⁷⁷ Hillpoint held onto its independence slightly longer than many small coops, lasting into the mid-1960s by shutting down its low-volume plants and expanding its sales of fluid milk in Chicago, Milwaukee, and Madison.¹⁷⁸ By the mid-1960s, however, Wisconsin Dairies had swallowed 21 smaller cooperatives, giving it almost complete control over central Wisconsin milk supplies. Hillpoint's directors felt forced to throw in the towel in April of 1967 and convinced their stockholders to vote for merger with Wisconsin Dairies.¹⁷⁹ Some small cooperatives proved more uncooperative in the consolidation scheme, particularly when farmer-members realized that a merger would lead to the closing of the "little farmer factory in [their]

¹⁷⁵ Truman F. Graf, "Implications of Milk Supply Situation in the Chicago Milk Shed on Organization of Dairy Cooperatives," in *Proceedings of Proposals for Reorganization of Dairy Cooperatives*, University of Wisconsin, Madison, WI, Feb. 11, 1967, AMPI Records, Box 2, Folder 9; Minutes, Membership Meeting, Wisconsin Cooperative Creamery Association, Jan. 26, 1956, WDC Records, Box 5, Folder 2.

¹⁷⁶ Truman F. Graf, Wisconsin Dairy Marketing Specialist Annual Report, 1958, RG 33, Entry 1001 A, 1958, Box 411, Marketing Folder; Truman F. Graf, Wisconsin Dairy Marketing Specialist Annual Report, 1959, RG 33, Entry 1001 A, 1959, Box 374, Marketing Folder; Gale L. VandeBerg, Wisconsin Annual Narrative Report, Project IV, Marketing and Utilization, Dec. 31, 1962, RG 33, Entry 1001 A, 1962, Box 30, Project IV Folder.

¹⁷⁷ Minutes, Board of Directors Meeting, Hillpoint Cooperative Dairies, Apr. 7, 1955, WDC Records, Box 2, Folder 7; Minutes, Special Board of Directors Meeting, Wisconsin Cooperative Creamery Association, Jul. 24, 1952, WDC Records, Box 4, Folder 13; G. G. Schuette, Speech at Annual Meeting of Hillpoint Cooperative Dairies, n.d. [1960?], WDC Records, Box 3, Folder 5.

¹⁷⁸ Minutes, Special Stockholders Meeting, Hillpoint Cooperative Dairies, Oct. 18, 1950, WDC Records, Box 2, Folder 2; Minutes, Board of Directors Meeting, Hillpoint Cooperative Dairies, May 8, 1958, WDC Records, Box 2, Folder 8; "Southwest Wisconsin Marketing Agreement," 1966, AMPI Records, Box 2, Folder 9.

¹⁷⁹ "History behind W. D. C.," *Wisconsin Dairies Co-op News*, May 1963, p. 3, WDC Records, Box 1, Folder 1; Minutes, Board of Directors Meeting, Hillpoint Cooperative Dairies, Apr. 15, 1967, WDC Records, Box 3, Folder 1. In fact, Wisconsin Dairies Cooperative was itself the product of a 1963 merger caused by this very competition for producers' milk; the directors of the Wisconsin Cooperative Creamery Association and Wisconsin Creamery Company Cooperative saw their competitors offering higher bulk premiums, so, in 1962, over a "couple of highballs" at a convention in Atlantic City, agreed to merge to gain marketing strength. Unsigned Memo ["Wisconsin Dairies Cooperative Was Conceived in Atlantic City"], n.d. [1963], WDC Records, Box 1, Folder 1.

neighborhood."¹⁸⁰ In these situations, cooperatives such as Lake to Lake and Badger Consolidated pursued the more aggressive strategy of hostile takeover through stock purchase.¹⁸¹ By 1967, this merger wave led to a decrease in the number of outer-ring dairy cooperatives in the Midwest by more than one-third since the end of World War II, even as their sales more than doubled.¹⁸²

Economists like Truman Graf phrased this consolidation process in terms of "efficiencies," a word which subtly masked the new power relationships at hand. The old class division between outer ring farmers and inner ring farmers began to dissolve as all Wisconsin farmers—at least those able to stay in the business—began producing Grade A milk. The giant cooperatives could then sell the milk on either fluid or manufactured milk markets, whichever gained the highest price.¹⁸³ Furthermore, because bulk milk tanks and bulk milk tank trucks made it possible to cheaply collect and ship milk long distances, outer-ring cooperatives could successfully send their milk to high-priced city markets like Chicago, or even further if the price warranted. In 1965, Wisconsin dairies shipped 119 million pounds of fluid milk out of state; just one year before, out-of-state shipments totaled only 70 million.¹⁸⁴ Much of this milk headed to Chicago, but some truckers hauled bulk loads as far as Indianapolis, Oklahoma, and even Texas when shortages developed in those areas.¹⁸⁵

The USDA's federal milk marketing orders, predicated on the distribution of milk within 100- to 150-mile zones, were consequently becoming increasingly obsolete in the late 1960s. Wisconsin's outer-ring cooperatives banded together with other states' cooperatives in organizations such as Chicagoland Dairy Sales and Associated Dairymen to create "superpools"

¹⁸⁰ Minutes of Social Meeting of Consolidated Badger Cooperative, Sep. 7, 1950, CBC Records, Reel 2.

¹⁸¹ Torgerson, *Building Markets*, 102-3; Minutes of Resolutions Committee Meeting of Consolidated Badger Cooperative, Apr. 15, 1958, CBC Records, Reel 2.

¹⁸² Williams, et al., *Organization and Competition*, 31-2. See also Gavin McKerrow, "The Role of Cooperatives in Dairy Marketing," address before American Farm Bureau Federation Dairy Conference, Dec. 9, 1963, Gavin McKerrow Records, Wisconsin Historical Society, Madison, WI, Box 1, Folder 1.

¹⁸³ In 1950, the Wisconsin Cooperative Creameries made only 1% of its sales as fluid milk; in 1973 its successor cooperative, Wisconsin Dairies, had 40% of its sales in fluid milk. Audit Report, Wisconsin Cooperative Creameries Association, 1950, WDC Records, Box 5, Folder 10; Wisconsin Dairies Cooperative, *Annual Report*, 1973-74.

¹⁸⁴ "Wisconsin Ships Record Milk Volume," *Milk Dealer* (Apr. 1966): 30.

¹⁸⁵ "Milk Transfer Station Dedicated," *Modern Milk Hauler* (Sep. 1966): 8-9; "The Move to Tank-to-Tank Transfer," *Milk Dealer* (May 1960): 32-3, 118; William T. Butz, *Long-Distance Shipment of Market Milk* (Washington: USDA, Economic Research Service, 1964).

of milk for sale in Chicago.¹⁸⁶ Associated Dairymen, Inc., created in 1964 as a marketing organization for farmers previously excluded from federal milk orders, included members in a giant swath from Texas west to Colorado and north to Wisconsin and Minnesota.¹⁸⁷ Its leaders hailed the mega-merger as an opportunity to garner higher prices for outer-ring farmers without driving up consumer price of milk, since the cost of fluid milk production was generally lower on outer-ring farms able to grow their own hay for cattle feed.¹⁸⁸ The merger trend went one step even further in 1969 with the creation of Associated Milk Producers, Inc. (AMPI) out of 21 cooperatives.¹⁸⁹ With the encouragement and help of Wisconsin extension agents, particularly economist Hugh L. Cook, AMPI developed a "unified marketing program" by coordinating the milk sales of 45,000 farmers—one-tenth of the nation's dairy farmers.¹⁹⁰ Known as a "super-coop," AMPI proved "undeniably effective against [inner-ring] milk distribution giants" in gaining control over the sale of fluid milk in the early 1970s.¹⁹¹

Ironically, these developments essentially achieved the goals of the 1933 Wisconsin Cooperative Milk Pool strike. The reorganization of dairy marketing set in motion by the bulk tank system made it possible for outer-ring farmers to sell their lower-priced milk to city consumers, breaking the federally enforced monopoly on fluid milk markets, established to preclude exactly such a situation. It was, in effect, a permanent solution to the farm strife at the heart of the "milk problem." Percy S. Hardiman, the son of the founder of Milwaukee's Golden Guernsey Cooperative, appreciated the irony of this situation in a 1976 oral history. By merging the interests of agricultural economists, large dairy cooperatives, and outer-ring farmers, AMPI had achieved, without violence or significant public outcry, "pretty much what the Milk Pool was

¹⁸⁶ "New Era in Chicago Milk Marketing," *Milk Dealer* (Jun. 1966): 22.

¹⁸⁷ Madison Milk Producers Cooperative Dairy, Press release, Nov. 10, 1967, AMPI Records, Box 2, Folder 10; Harold S. Nelson, Press release, "News from Dairy Farmers of Pure Milk Association," Sep. 13, 1967, AMPI Records, Box 2, Folder 21; Harold S. Nelson to Lyman D. McKee, "Proposal to Provide a Standby Fluid Milk Supply for Markets of the Midwest and Southwest," Aug. 3, 1966, AMPI Records, Box 2, Folder 21.

¹⁸⁸ Harold S. Nelson to Lyman D. McKee, "Proposal to Provide a Standby Fluid Milk Supply for Markets of the Midwest and Southwest," Aug. 3, 1966, AMPI Records, Box 2, Folder 21.

¹⁸⁹ E. Dale Odom, "Associated Milk Producers, Incorporated: Testing the Limits of Capper-Volstead," *Agricultural History* 59 (Jan. 1985): 40-55.

¹⁹⁰ Truman F. Graf, et al., "Memorial Resolution of the Faculty of the University of Wisconsin on the Death of Emeritus Professor Hugh L. Cook," May 2, 1983, Faculty Biographical Files, University of Wisconsin Archives, Madison, WI; "UW Ag Economist Cook Dies," *Capital Times (Madison, WI)*, Mar. 9, 1983, *ibid.*; Lyman D. McKee (Acting Secretary, Mid-America Cooperative Dairymen), Minutes of Meeting, Apr. 17, 1967, AMPI Records, Box 2, Folder 9; Press release, "AMPI News," Oct. 4, 1969, AMPI Records, Box 2, Folder 10.

¹⁹¹ Norm Reeder, "Operating Co-Ops, Let's Unite Now!," *Farm Journal*, Jan. 1970, 29, 61; Norm Reeder, "Can the Super Co-Ops Crash These Roadblocks?" *Farm Journal*, May 1971, 21, 32.

thinking about."¹⁹² John D. Black would also likely have approved of the outcome, since the number one objective of AMPI as stated during its formation embraced one of his most revered phrases: "To provide for better prices to dairy farmers through more orderly marketing."¹⁹³

The Modern Milk Hauler

The operation of the postwar milk marketing machine depended upon a new kind of rural industrial worker: the modern milk hauler. The difficulties milk haulers experienced in becoming integrated into the new order of the 1950s and 1960s illustrate some of the political and economic consequences of that order. These truckers were not the long-haul or over-the-road drivers that have inspired popular culture references to "kings of the open road." Neither, as we shall see, was their situation similar to that of the Teamsters whose control of city milk delivery had begun to wane in the 1960s. The modern milk hauler was an integral, if industrial, member of his rural community, and—in his own mind at least—"independent."

The occupation of milk hauling first emerged in the late 1910s and 1920s, when enterprising farmers began loading wagons and Model Ts with neighboring farmers' milk to haul to local processing plants. In those days of heavy milk cans and poor roads, haulers rarely traveled more than 50 miles a day, stopping at fewer than two dozen farms. Hauling was often just a part-time job, "a sideline to his farming activities." In the 1930s and 1940s, as roads improved, hauling became somewhat bigger business. Drivers often bought a larger truck or two, sometimes equipped with a tank to allow cans to be unloaded directly on the patron's farm. With larger equipment, they began expanding their routes into the 75 mile range, causing the "evil effect" noted by John D. Black of haulers encouraging outer-ring farmers to ship their milk to town.¹⁹⁴ When bulk handling appeared in Wisconsin in the 1950s, many of the approximately

¹⁹² Percy S. Hardiman, Interview by Dale Trelevan, Aug. 3, 1976, Tape 3, Side 1.

¹⁹³ "Objectives and Purposes of Suggested Reorganization," n.d. (1969?), AMPI Records, Box 2, Folder 9.

¹⁹⁴ "Can You Beat This 41 Year Record?" *Modern Milk Hauler* (Nov. 1960): 23; "37 Years of Milk Hauling," *Modern Milk Hauler* (Oct. 1960): 18-9, 23; "Milk Hauling Has Come a Long Way," *Modern Milk Hauler* (Feb. 1961): 6-7; "Wisconsin Hauler on the Job 49 Years," *Milk Hauler and Food Transporter* (Apr. 1973): 18; "Wisconsin Man in 'Haul of Fame'," *Milk Hauler and Food Transporter* (May 1973): 16.

2,500 milk haulers in the state were the sons of the men who had established these can routes.¹⁹⁵

In one of its early issues, the trade journal *Modern Milk Hauler* (first published in October, 1960) reported the results of a survey intended to describe its target audience. The "average bulk milk hauler," the journal found, was 34.5 years of age, married, with 2.5 children. He had entered the business because "he likes to be independent" and preferred working outdoors; his wife, meanwhile, stayed indoors keeping the company's books or dispatching drivers. The average bulk hauler owned a truck and a half, each machine fitted with an 1800-gallon tank. The average haul had by this time expanded to 90 miles a day, although with fewer, larger farms to visit, the number of stops averaged just over 12.¹⁹⁶ A flesh-and-blood version of these statistics was Archie Lawrence of Brooklyn, Wisconsin (1965 population: approximately 500). Although owning a slightly larger tank than average (2200 gallons) and running a longer daily route (125 miles), Lawrence and his bookkeeping wife considered their business to be relatively small. Neighborliness lay at the core of the enterprise, as the Lawrences offered their farmer-customers low-cost milkhouse paint jobs.¹⁹⁷ Some haulers had little time for milkhouse painting, running significantly larger operations with hired drivers. Nonetheless, a hauler like Spencer Findlay of Whitewater, the owner of 6 trucks, likely represented the upper end of the size spectrum.¹⁹⁸ Most milk hauling businesses were small, family enterprises, and like many of the farms they served, relied on unpaid women's work in order to stay afloat.¹⁹⁹

The individual hauler may not have run a large operation, but his work was essential for creating the enormous volumes of milk needed by super-coops of the 1960s. As an editorialist in the haulers' trade journal put it in 1973: "Milk transportation or hauling, if you

¹⁹⁵ John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Jul. 1962): 10.

¹⁹⁶ "Average Bulk Milk Hauler," *Modern Milk Hauler* (Apr. 1963): 13. See also "Survey Gives Lowdown on Haulers," *Modern Milk Hauler* (Sep. 1961): 4.

¹⁹⁷ Fred F. Schwenn, "Wisconsin Hauler Likes His Work," *Modern Milk Hauler* (May 1965): 5.

¹⁹⁸ "Good Way of Life Based on Modern Hauling Business," *Modern Milk Hauler* (Aug. 1961): 3-4.

¹⁹⁹ Fred Schwenn, "Pick Ups," *Milk Hauler and Food Transporter* (Sep. 1973): 3. On the role of unpaid women's work masking the labor costs of postwar dairy farming in Wisconsin, see Jess Gilbert and Raymond Akor, "Increasing Structural Divergence in United States Dairying: California and Wisconsin since 1950," *Rural Sociology* 53 (Spring 1988): 56-72. For a comparison with New Mexico, see Joan M. Jensen, "Dairying and Changing Patterns of Family Labor in Rural New Mexico," *New Mexico Historical Review* 75 (Apr. 2000): 157-94. On the changes in gendered divisions of dairying labor in the nineteenth century, see Sally McMurry, *Transforming Rural Life: Dairying Families and Agricultural Change, 1820-1885* (Baltimore: Johns Hopkins University Press, 1995).

please, has given a big boost to milk marketing. Selling of milk by co-ops isn't on a provincial basis anymore. Milk is now transported and sold where it is needed."²⁰⁰ Bulk haulers not only made high-volume marketing possible, but they served as indispensable intermediaries between producers and processors.²⁰¹ Haulers were responsible for maintaining milk quality in the new all-Grade A system. Besides being expected to "have clean and tidy personal habits and ... wear clean clothing," the hauler had to be able "by sight or smell ... to distinguish non-conforming [i.e., off-flavor or dirt-contaminated] milk, since with him rests the decision to reject or accept the milk"²⁰² Furthermore, the milk hauler was required to take samples of milk at each farm. Butterfat samples would help determine the amount of the farmer's paycheck for a particular load, while bacteria samples would guarantee a processor's adherence to public health standards. Bulk haulers were thus widely recognized as highly skilled workers. Extension agents could write distribute circulars describing the steps involved, but only years of on-the-job experience could create the necessary skills.²⁰³

Despite—or perhaps because of—this acknowledged importance and skill, many bulk haulers in Wisconsin felt unfairly treated by dairies in the 1960s. In the bulk system's "scramble to gain volume," cooperatives set their haulers' rates as low as possible in order to offer farmers a higher price for their milk.²⁰⁴ In order to pay the significant expenses of a bulk tank truck, gasoline, insurance, and taxes, haulers were forced to increase the length of their routes. According to one haulers' advocate, this "creates a substantial problem for the milk hauler. Such a hauler, affected by high daily mileage and resulting high variable costs ... is presently *subsidizing the processor* in his desire to obtain far-out product."²⁰⁵ The aggressive quest for

²⁰⁰ Fred Schwenn, "Pick Ups," *Milk Hauler and Food Transporter* (May 1973): 3.

²⁰¹ "Take Time To Do the Job," *Modern Milk Hauler* (Nov. 1960): 11; "This Modern Milk Hauling Business," *Modern Milk Hauler* (Oct. 1960): 6-7.

²⁰² J. E. Edmonson and J. H. Gholson, "Bulk Pick-Up and the Hauler," *Milk Plant Monthly* (May 1955): 26-7; "We Salute You, Modern Milk Haulers of America," *Modern Milk Hauler* (Oct. 1960): 5.

²⁰³ Myron P. Dean, *10 Steps in Bulk Milk Pick-Up*, Circular 597 (Madison: University of Wisconsin Extension Service, August 1961), RG 33, Entry 1001 A, 1961, Box 60, Marketing-Dairy Folder; "Milk Hauler Key to Quality Control," *Milk Hauler and Food Transporter* (Jul. 1973): 17.

²⁰⁴ "Commission Says 'No' to Regulation of Hauling Rates," *Modern Milk Hauler* (Mar. 1964): 6.

²⁰⁵ Jim McKee, "Milk Hauler Group Favors Rate Rules," *Modern Milk Hauler* (May 1961): 7. Emphasis in original. Haulers also had to shoulder the financial responsibility for the milk in their tanks while in transit between farm and plant, which could lead to bankruptcy in event of a highway collision. John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Dec. 1963): 10-1; "High Court Spells out Legal Responsibility of Hauler," *Modern Milk Hauler* (Jul. 1964): 2-3.

volume reinforced itself and increased tensions in the industry, as bulk haulers seeking to fill their ever-larger tanks repeatedly urged farmers on their routes to boost their yields and install bigger bulk tanks of their own.²⁰⁶ Haulers who did not sufficiently expand their volume faced canceling of their contracts. Wisconsin Dairies, for instance, helped finance their contracted haulers' truck tanks, but craftily maintained half ownership of the equipment in order to easily buy out, if necessary, low-yielding haulers.²⁰⁷

Haulers concerned with these problems formed a unique organization in 1957 to negotiate with dairies for higher pay and standardized work conditions. Despite the nature of its demands, the Wisconsin Milk Haulers Association (WMHA) did not consider itself a labor union, but a trade association representing the interests of small businessmen.²⁰⁸ The essence of the problem, argued leaders recruiting members for the WMHA, was that the bulk hauling business was *too* small within the "economic jungle" of the dairy industry. Truckers spread out over great distances had little opportunity to learn what other haulers charged for their services, and so had to fend for themselves in setting rates that would justify their investments in trucks and tanks.²⁰⁹ Haulers, as independent businessmen, theoretically "negotiated" with processors on pay scales, but "since the hauler is dealt with individually he has little or nothing to say about the hauling rates."²¹⁰ The WMHA likened this situation to the feudal manors of medieval Europe, with haulers as the vassals "of their overlords, the operating dairies." Dairies encouraged haulers to act as "independent" owner-operators, but controlled their incomes through arbitrary rate manipulation.²¹¹ If an individual trucker asked for higher rates, as one

²⁰⁶ "No Exceptions—Every Producer on Every-Other-Day Pickup," *Milk Hauler and Food Transporter* (Feb. 1973): 4-5; "Producers Say Most Haulers Are Neat, Prompt, Accurate," *Milk Hauler and Food Transporter* (Mar. 1973): 9.

²⁰⁷ Minutes, Board of Directors Meeting, Consolidated Badger Cooperative, Nov. 2, 1951, CBC Records, Reel 2; Minutes, Special Board of Directors Meeting, Wisconsin Creamery Company Cooperative, Jan. 15, 1959, WDC Records, Box 4, Folder 5; Minutes, Board of Directors Meeting, Wisconsin Creamery Company Cooperative, Feb. 5, 1958, WDC Records, Box 4, Folder 5; Minutes, Special Board of Directors Meeting, Wisconsin Creamery Company Cooperative, Feb. 3, 1958, WDC Records, Box 4, Folder 5; Minutes, Board of Directors Meeting, Wisconsin Cooperative Creamery Association, Aug. 8, 1956, WDC Records, Box 5, Folder 2; Minutes, Board of Directors Meeting, Wisconsin Cooperative Creamery Association, Jun. 9, 1959, WDC Records, Box 5, Folder 3.

²⁰⁸ James R. McKee, "Why Our Milk Haulers Association Asks for Rate Regulations," *Modern Milk Hauler* (Mar. 1961): 4-5.

²⁰⁹ John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Jun. 1962): 10-1; W. M. Roberts, "Technology Department: Hauling Charges," *Milk Dealer* (Oct. 1959): 144-6.

²¹⁰ Dan E. Sauve, "Why Hauling Regulations?" *Modern Milk Hauler* (Nov. 1962): 10-1.

²¹¹ John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Jul. 1962): 10.

Mr. Heding did at a meeting of the board of directors of Wisconsin Cooperative Creameries in 1955, the cooperative would simply threaten to do its own hauling.²¹²

Joining the International Brotherhood of Teamsters might have seemed an appropriate solution to these "feudal" conditions. In fact, the Teamsters made an effort to organize bulk hauling in the 1950s, gaining some success with larger private companies such as Bowman and Borden, where the union already had strong representation among "inside" plant workers.²¹³ The Wisconsin Teamsters gained a significant achievement in 1953 when they signed a number of dairy processors and larger trucking firms to a Statewide Milk Tank Agreement, establishing a minimum milk hauler's wage of \$1.65 per hour with overtime and seniority provisions.²¹⁴ The firms that agreed to the contract did so as a means of stabilizing wages across the industry, preventing individual firms from gaining a competitive foothold by slashing their labor costs.²¹⁵ Unfortunately, the "statewide" agreement covered relatively few firms or employees; Teamsters Local 695 of Madison signed up only 6 companies, with 49 drivers, in the 1950s.²¹⁶ Although it is impossible to know the exact number of milk haulers in the state who came under the contract, a very generous estimate would put the number at around 700—less than one quarter of the haulers in Wisconsin at the time.²¹⁷

Even if this many drivers were signed to the agreement, the contract proved hard to enforce in the hyper-competitive atmosphere of postwar milk marketing, where individual firms had significant incentives to disregard the contract to undercut their competitors on labor

²¹² Minutes, Board of Directors Meeting, Wisconsin Cooperative Creamery Association, Mar. 3, 1955, WDC Records, Box 5, Folder 1; John J. Keller, "On the Firing Line," *Modern Milk Hauler* (May 1963): 10; John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Jun. 1963): 17; John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Jul. 1964): 17; John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Sep. 1964): 13.

²¹³ International Brotherhood of Teamsters Local 695, Milk Tank Truck Surveys, 1954, IBT 695 Records, Box 14, Folder 12; David Gourlie (Teamsters Local 695), Complaint to Wisconsin Joint State Milk Tank Area Committee, Oct. 11, 1956, IBT 695 Records, Box 32, Folder 3.

²¹⁴ International Brotherhood of Teamsters Local 695, Milk Tank Agreement, Apr. 1953, IBT 695 Records, Box 14, Folder 12.

²¹⁵ The Agreement was drafted in response to a 1945 request from the owner of a mid-sized trucking firm, Quality Milk Service, who saw his smaller competitors undercutting his firm's wages. Allan Torhorst (Quality Milk Service) to John Picago, Aug. 8, 1945, IBT 695 Records, Box 14, Folder 12; Minutes, Milk Tank Meeting, Madison, WI, May 8, 1953, IBT 695 Records, Box 18, Folder 5.

²¹⁶ "Employers Signed to the State Milk Tank Agreement by Local 695," Sep. 9, 1954, IBT 695 Records, Box 14, Folder 12.

²¹⁷ Fourteen Teamster locals were parties to the tank agreement. If Local 695's numbers are taken as average, which seems reasonable, since Madison's jurisdiction would have been smaller than Milwaukee's but larger than the more rural areas of the state, then 50 drivers times 14 equals 700. More than likely, this is a gross overestimate, since Madison was a particularly friendly climate for union organizers in the 1950s.

costs.²¹⁸ Teamsters locals repeatedly complained to their state officers that dairies were breaking the agreement by using out-of-state drivers and non-union "wildcat" haulers.²¹⁹ The Teamsters' difficulty enforcing the agreement was compounded in 1958 when the National Labor Relations Board instructed the union to cease and desist from using its power within larger private dairies—in this case, Bowman—to coerce the dairies not to accept milk from non-union trucking firms. The three largest private dairies in Wisconsin took the ruling as a cue to ignore the Milk Tank Agreement for the next three years.²²⁰

An even more fundamental problem was the aversion of the "average milk hauler" to labor unions. The Teamsters, in particular, conjured up images of boss unionism and coercive tactics.²²¹ A 1974 editorial in the bulk haulers' trade journal explained this attitude as a consequence of the average hauler's "farm heritage" that encouraged an "independent spirit" like that of "farmers, who have been traditionally opposed to unionism."²²² Haulers preferred to think of themselves as businessmen—or rather, "skilled, qualified, licensed professional[s]"²²³—not laborers. This attitude was not confined to Wisconsin. William I. Miller, who ran a three-truck milk hauling operation in Fisherville, Kentucky, felt that haulers did not receive fair pay for their skilled work, but asserted that he was "definitely opposed to unions."²²⁴ The New York State Teamsters Council complained in the early 1960s that bulk haulers who refused to unionize were mere "farmers who have quit farming" and thus not "legitimate truckers." Milk haulers retorted that they were "individual owners and not subject to union jurisdiction."²²⁵

²¹⁸ Minutes, Milk Tank Meeting, Madison, WI, May 8, 1953, IBT 695 Records, Box 18, Folder 5; David Gourlie (Teamsters Local 695), Complaint to Wisconsin Joint State Milk Tank Area Committee, Oct. 11, 1956, IBT 695 Records, Box 32, Folder 3; Minutes, Wisconsin Teamsters Joint Council No. 39, Milk Tank Negotiations, Milwaukee, WI, Sep. 7, 1961, IBT 695 Records, Box 79, Folder 7.

²¹⁹ Minutes, Wisconsin Teamsters Joint Council, Milk Tank Committee Meeting, Jul. 24, 1959, IBT 695 Records, Box 21, Folder 6; Minutes, Wisconsin Teamsters Joint Council No. 39, Milk Tank Negotiations, Milwaukee, WI, Aug. 23, 1961, IBT 695 Records, Box 79, Folder 7; Minutes, Meeting between Local Unions and Milk Tank Operators, Milwaukee, WI, Aug. 7, 1957, IBT 695 Records, Box 79, Folder 7.

²²⁰ National Labor Relations Board, *International Brotherhood of Teamsters et al. and Rudolph Schroeder and Randy Schroeder*, Case No. 13-CB-518, *Decision and Order*, May 16, 1958, IBT 695 Records, Box 79, Folder 7; Ross M. Madden (Regional Director, Thirteenth Region, National Labor Relations Board) to Lester M. White, "Schroeder and Son," Sep. 4, 1957, *ibid.*, Box 79, Folder 7; Minutes, Chicago Milk Shed Tank Truck Meeting, Chicago, IL, Mar. 16, 1960, *ibid.*, Box 18, Folder 5; Clem Gerstner (Teamsters Local 75) to Frank Gillespie, Thomas Hagerty, and Stanley Baumann, Mar. 8, 1960, *ibid.*, Box 21, Folder 6.

²²¹ The negative public image of the Teamsters will be discussed in more detail in Chapter 5.

²²² Fred Schwenn, "Pick Ups," *Milk Hauler and Food Transporter* (Jan. 1974): 3. See also Fred Schwenn, "Strong Leadership Is Basic Need," *Modern Milk Hauler* (Oct. 1967): 4.

²²³ Jim McKee, "Milk Hauler Group Favors Rate Rules," *Modern Milk Hauler* (May 1961): 7.

²²⁴ "Milk Haulers' Round Table," *Modern Milk Hauler* (May 1961): 12-3, 23.

²²⁵ "Teamsters, Farmers Feuding," *Milk Dealer* (Feb. 1963): 24.

Compounding the anti-union sentiments of most milk haulers, the Teamsters faced the challenge of a 1960 National Labor Relations Board ruling that "bulk milk drivers are independent contractors and not employees within the meaning of the Taft-Hartley Act."²²⁶

This was the setting for an effort by the Wisconsin Milk Haulers Association to gain regulation of haulers' rates in their state. In February of 1961 the WMHA filed a petition with the Wisconsin Public Service Commission requesting an investigation into the problems of bulk milk hauling.²²⁷ The Public Service Commission was the state equivalent of the Interstate Commerce Commission, in that it required new trucking firms to obtain a certificate of public convenience and necessity. In other words, if an individual wanted to start a new trucking business for hauling within the state of Wisconsin, he had to prove to the Commission that the new firm would not create unnecessary competition for existing firms. The Commission also administered Wisconsin's bulk hauling licensing exam, written by the state's Department of Agriculture and the Board of Health to assure milk quality in the bulk handling system.²²⁸ Despite these layers of regulations, however, the Commission treated milk truckers as farm-to-market haulers. Since 1931, the Commission had exempted truckers hauling farm products to market from rate control and some forms of taxation.²²⁹ When the WMHA requested an investigation into hauling rates in 1961, they were essentially attempting to "counter-organize, in the phrase of historian Ellis Hawley, using the power of the state to intervene on behalf of the interests of weakly organized milk haulers."²³⁰

The WMHA argued before the Public Service Commission that the exemption for milk haulers created unfair conditions for the independent businessman. Without regulation requiring dairy cooperatives to pay uniform and "fair rates," bulk milk haulers faced bankruptcy;

²²⁶ "Driver Labor Standards," *Modern Milk Hauler* (Oct. 1960): 8; Minutes, Wisconsin Teamsters Joint Council, Milk Tank Committee Meeting, Jul. 24, 1959, IBT 695 Records, Box 21, Folder 6.

²²⁷ Public Service Commission of Wisconsin, "Petition of the Wisconsin Milk Haulers Association, Inc., for an Investigation of Rates and Charges for Milk Haulers and the Establishment of Minimum Rates: Hearing," Feb. 17, 1961, IBT 695 Records, Box 18, Folder 5.

²²⁸ Myron P. Dean, Wisconsin Dairy Marketing Specialists' Annual Report, 1961, RG 33, Entry 1001 A, 1961, Box 60, Marketing-Dairy Folder.

²²⁹ Public Service Commission of Wisconsin, "In the Matter of Enforcement of Chapter 454, Laws of Wisconsin of 1931, Relating to the Taxation of Motor Vehicle Hauling Companies," Dec. 23, 1931, AMPI Records, Box 1, Folder 5; John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Dec. 1963): 10-1.

²³⁰ Ellis W. Hawley, *The New Deal and the Problem of Monopoly: A Study in Economic Ambivalence* (Princeton: Princeton University Press, 1966).

as a consequence, the stability of the entire bulk handling system was threatened.²³¹ The Public Service Commission agreed in February 1961 that this was legitimate grounds for consideration of the WMHA's request, but requested data from the trade association to back up the assertion that haulers did not receive fair rates.²³² After a year of consultation with their lawyers and the dairy cooperatives, the WMHA came up with the desired numbers. With the goal of guaranteeing the average hauler \$450 in monthly earnings, the trade association asserted that the cost of equipment, taxes, and insurance required a rate of 16.8 cents per hundredweight of milk. Remarkably, the dairies agreed that this number was fair, even though this seems to have been almost two cents higher than the generally prevailing rate at the time.²³³ But if the dairies proved willing to accept the haulers' definition of a fair price in non-binding negotiations, it soon became apparent to the WMHA that the dairies did not intend to put the higher rates into effect.²³⁴ Declaring that "the time for pussy footing is over," the haulers returned to the Public Service Commission in 1964, demanding state intervention to assure a "fair return" on truckers' investments. The dairies, however, were supported in the hearings by the Wisconsin Department of Agriculture, the state Farm Bureau, and agricultural extension agents—a far more strongly organized set of interest groups than the small, recently established haulers association. The Public Service Commission denied the WMHA's request in February 1964, asserting that evidence was insufficient to prove that haulers as a group were "not realizing satisfactory profits." The state's milk haulers would continue to be exempt from rate regulation, and therefore forced to continue to "negotiate" rates with dairies as individual contractors.²³⁵

Wisconsin's independent milk haulers had failed to counter-organize against the powerful interests running the postwar milk marketing machine. This episode illustrates more

²³¹ James R. McKee, "Why Our Milk Haulers Association Asks for Rate Regulations," *Modern Milk Hauler* (Mar. 1961): 4-5; "Difference in Hauling Rates," *Modern Milk Hauler* (May 1962): 6-10.

²³² Public Service Commission of Wisconsin, "Petition of the Wisconsin Milk Haulers Association"; "When Milk Haulers Meet," *Modern Milk Hauler* (Jul. 1961): 4-5.

²³³ "Rate Hearing Is Hot Issue," *Modern Milk Hauler* (Mar. 1962): 6, 12; Minutes, Board of Directors Meeting, Consolidated Badger Cooperative, Aug. 7, 1959, CBC Records, Reel 2; C. T. McCleery, "Madison, Wisconsin Milk Marketing Area, Federal Order No. 51, Annual Report," 1963, RG 136, Annual Reports on Federal Milk Orders, Entry 26, National Archives II, College Park, MD, Box 30, p. 38.

²³⁴ "Rate Hearing Is Hot Issue," 6.

²³⁵ John J. Keller, "On the Firing Line," *Modern Milk Hauler* (Jun. 1963): 17, "Commission Says 'No' to Regulation of Hauling Rates," *Modern Milk Hauler* (Mar. 1964): 6; "Farm Bureau States Policy," *Modern Milk Hauler* (Jan. 1963): 10; "Wisconsin Haulers Ask Rate Raise," *Milk Hauler and Food Transporter* (Jul. 1973): 7.

than just the problems faced by a relatively small group of rural workers. Milk haulers became essential to maintaining the postwar system of "orderly marketing," but did not feel that their central role in the system was sufficiently rewarded. Like the consumers, Teamsters, and Milk Pool strikers of the 1930s and 1940s, modern milk haulers felt that the price of milk was unfair. Unlike those earlier episodes, however, their definition of the "milk problem" gained little public attention or policy response. Haulers were the only interest group remaining to significantly question the milk marketing order, but had become just a small cog in the postwar marketing machine.

Conclusion

In 1970, a group of economists investigating the price of milk in the United States declared that the interests of consumers were satisfactorily met by the dominance of supermarkets in the industry, since milk had become a low-cost "staple grocery item."²³⁶ Outer-ring dairy farmers were also satisfied, having successfully taken control of the marketing of much of the nation's fluid milk supply. Small private dairies, organized milk deliverymen, local rural cooperatives, farmers bankrupted by the bulk system, and milk haulers were less pleased with the new order, but for the USDA's economists and extension agents, the system provided a permanent and effective solution to the New Deal's "milk problem." The milk marketing machine would encounter some brief resistance in the early 1970s, including a lawsuit filed by Ralph Nader against the USDA, after a scandal involving questionable political donations by AMPI to Richard Nixon's 1972 campaign fund.²³⁷ Nader was little match for the bureaucratic power of the USDA, however, and the issue lost resonance when AMPI split itself into three smaller regional divisions.²³⁸

²³⁶ Williams, et al., *Organization and Competition*, 8.

²³⁷ "Milk Money," *New Republic*, Feb. 12, 1972, 7; "Milk: Why Is the Price So High?" *Consumer Reports*, Jan. 1974, 77-80; Frank Wright, "Land of Milk and Money," *Nation*, Dec. 20, 1971, 657-9; Brooks Jackson, "Still Flowing: Milk Money," *New Republic*, Aug. 10, 1974, 11-12.

²³⁸ James L. Guth, "Consumer Organizations and Federal Dairy Policy," *Policy Studies Journal* 6 (Summer 1978): 499-503; Robert C. Bjorklund, "Prof Denies Farmers Fix Milk Prices," *Wisconsin State Journal*, Dec. 14, 1975, Faculty Biographical Files (Truman F. Graf), University of Wisconsin Archives, Madison, WI.

Postwar technological developments in milk distribution and collection, encouraged by agricultural experts, had effectively reframed the politics of the price of milk. The price of milk was now primarily a matter for negotiation in the marketplace—not on the bargaining table, not on the front pages of newspapers, not in anti-trust hearings before Congress, and not in violent milk-dumping actions by farmers.²³⁹ Milk moved from farms to markets in giant thermally insulated tanks, then to consumers' refrigerators via tightly sealed paper cartons and plastic jugs, effectively insulating the liquid, in terms of price, from the political-economic disputes of the old "milk problem." It was, at least for the agricultural experts of the USDA, an "ideal distribution system."

²³⁹ The one exception to this last statement, the milk withholding actions of the National Farmers Organization in March 1967, proves the rule. Rather than fundamentally altering the power relations of the new milk marketing order, the decision of several thousand farmers in 25 states to dump or hold their milk to achieve higher prices succeeded only in creating another large cooperative to compete with AMPI on essentially the same terms. "When Dairy Farmers Went on Strike," *U.S. News and World Report*, Apr. 3, 1967, 53; N. Reeder, "NFO Milk Contracts Worry Big Co-Ops," *Farm Journal*, Feb. 1970, 71; "Truckers Provide 'Market on Wheels' for NFO Milk," *Milk Hauler and Food Transporter* (Dec. 1973): 6.

Chapter 3: Beef Trusts and Asphalt Cowboys

Technologies for moving meat from farmers to consumers fundamentally structured the politics and economics of the beef industry in the twentieth century. Railroads first made a large-scale beef industry possible in the late nineteenth century, but also helped introduce the problem of monopoly to cattle raisers, meat consumers, and government officials. By the 1930s, trucks and highways helped to redefine the geography, economics, and politics of beef production and marketing. For a relatively brief period from the 1930s through the 1950s, an uneasy alliance of farmers, consumers, businessmen, and government officials relied on trucking to disaggregate and decentralize the "Beef Trust" created in the age of railroads. Ultimately, however, trucking would become a tool in the 1960s for the re-assembly of a new, if less controversial, form of monopoly in beef production.

But if this chapter assumes the importance of transportation technologies in shaping the structure of the beef industry, it does not argue that this was a case of "hard" technological determinism.¹ Trucks were used by people with power to gain more power over the methods of beef production and marketing in the twentieth century. Cattle producers wanted more control over the prices they received for their animals; consumers wanted inexpensive, quality meat; meatpackers wanted steady profits; and government agents wanted all of these things to occur in a competitive atmosphere. Trucking played an important role in the efforts of these groups to achieve their interests, so that, as in the case of milk, trucks were deeply implicated in the political economy of the industry. Unlike the case of milk, however, agricultural policymakers never attempted to use trucking to implement a system of "orderly marketing" in beef. Instead, the politics of beef in the twentieth century were marked by a deep ambivalence. On the one hand, agricultural policymakers consistently found monopoly power to be a "problem" because of pressure from cattle producers and meat consumers, but on the other hand, did not feel that strong regulatory or technopolitical action was needed to solve the problem. Instead, through purposeful *inaction*, agricultural policymakers helped to uphold a strong culture of economic

¹ Merritt Roe Smith and Leo Marx, eds., *Does Technology Drive History?: The Dilemma of Technological Determinism* (Cambridge, MA: MIT Press, 1994).

independence in the American beef industry. As a consequence, the problem of monopoly went from being an issue of intense political discussion without action in the first half of the century to an accepted, even encouraged, fact by the end of the 1970s. The beef industry became a standard bearer for all that was considered "American" about industrial agriculture—free enterprise, high productivity, and low consumer prices. The truck drivers who helped make this system work were ideal representatives of this contradictory economic culture, which paid homage to a sense of independence reminiscent of the open range of the Old West while practicing a winner-take-all approach to the spoils of industrial capitalism.

Beef Production and the Problem of Monopoly

To understand how trucking and highways reconfigured the beef industry in the mid-twentieth century, we must first understand the system that was replaced. Railroads made it possible to mass market fresh beef in the late 19th century. The refrigerated railcar, introduced in the 1870s, provided a means of sending relatively inexpensive dressed beef from the cattle-producing regions of the Midwest to the beef-consuming Northeast. However, the rapid perishability of fresh beef required a distribution system of unprecedented scale and technological integration that laid the foundations for what came to be known as the "Beef Trust." From the 1870s until the early 1930s, a handful of giant firms dominated every aspect of converting western cattle into eastern steaks and roasts, from the buying and selling of cattle in stockyards to the slaughtering of the animals to the distribution of carcasses to retail butchers. Consequently, the "Big Five" meatpackers drew repeated attacks from farmers, consumers, small businessmen, and politicians concerned about the degree of monopoly power exercised in the meat industry. By World War I, the federal government initiated action to break up the "Beef Trust," but with little effect. The monopoly problem in beef marketing would require a technological fix—trucking—that did not prove its power until the 1930s.

The beef steer is a remarkably uncooperative animal when it comes to being cut into roasts for urban consumers. The problem is not that beef cattle are obstinate or untrusting of

men with sharp objects, but that they take a long time to produce edible meat, and furthermore, once they have been slaughtered, their meat immediately begins to putrefy. This latter problem of perishability has always made transportation the single most important factor structuring the business of meat production and marketing.² Before an extensive and reliable system of railroads arrived in the late 19th century, it simply was not possible to mass market beef. The hog, on the other hand, proved quite amenable to being mass marketed before the Civil War.

Pork was the first mass-produced and mass-marketed meat in the United States. The industrialization of porkpacking came earlier and more easily than it would for beefpacking for several reasons. Unlike beef cattle, hogs are extremely efficient converters of raw feed into edible meat. Willing and able to eat nearly anything from garbage to wild nuts, pigs proved especially useful in the early 19th century as "condensed corn," allowing farmers on the Midwestern prairies to convert their abundant low-value grains into high-value meat with little effort.³ As farmers dramatically expanded their production of hogs in the 1820s and 1830s, entrepreneurs established factories in the Ohio River valley to rationalize the slaughter of the suddenly over-abundant animal. Many features of the modern assembly line system of manufacturing began in the porkpacking houses of Cincinnati, although "disassembly" was a more apt name for the process that, by 1837, allowed 20 men to kill and clean 620 pigs in 8 hours.⁴

Mass production depended on mass distribution to justify the expense of large-scale slaughter, and again unlike the beef steer, the hog complied. Long before the rise of the Midwestern porkpackers, Americans had become accustomed to the taste of cured pork products, such as bacon, sausage, and ham. These compact food products with long shelf lives were relatively easy to transport in an era of expensive refrigeration, making it possible for packers in the Ohio River valley—particularly in "Porkopolis" (Cincinnati)—to ship cured meats long distances via the relatively slow steamboats of the era.⁵ Beginning in the 1850s, railroads

² Mary Yeager, *Competition and Regulation: The Development of Oligopoly in the Meat Packing Industry* (Greenwich, CT: Greenwood Press, 1981), xxiv.

³ William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991), 225-30; Eric B. Ross, "Patterns of Diet and Forces of Production: An Economic and Ecological History of the Ascendancy of Beef in the United States Diet," in *Beyond the Myths of Culture*, ed. Eric Ross (New York: Academic Press, 1980), 187.

⁴ Sigfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History* (New York: Oxford University Press, 1948), 214-8, 90.

⁵ Cronon, *Nature's Metropolis*, 228-9; Louis C. Hunter, *Steamboats on the Western Rivers: An Economic and Technological History* (Cambridge, MA: Harvard University Press, 1949), 31; Ross, "Patterns of Diet," 192-3.

provided several advantages over steamboats for porkpackers, especially the ability to ship during winters when rivers were frozen over, allowing the great railroad city of the Midwest—Chicago—to supplant Cincinnati as the nation's pork capital. By the end of the Civil War, Chicago's meatpackers had perfected the "disassembly line" for hogs and were able to ship cured pork products to all major cities, year-round. The hog had been fully industrialized, its death mechanized and its distribution made independent of the seasons and defiant of geography.⁶

No similar industrialization of beef production or marketing occurred during this period. Whereas bacon and ham had been staple foods since colonial days, Americans had long refused to eat anything but fresh beef—especially in the 19th century, when techniques for salting, smoking, or otherwise curing beef produced only tough and unpalatable meat.⁷ Because uncured beef begins to rot so quickly after slaughter, achieving a tasty steak required that a cow be kept alive until just before it was distributed to consumers. No form of transportation was speedy enough to allow a mid-19th-century Midwestern meatpacker to mass-slaughter cattle and get beef to Eastern consumers in edible form at a reasonable price. As a consequence, the slaughter and distribution of beef in urban centers was a highly atomistic, small-scale industry carried on mainly by neighborhood butchers who slaughtered cattle only as needed.⁸ Furthermore, whereas the hog is a squat animal with an impressive ratio of meat to bone, the cow is a long-legged beast with about 45 percent of its weight taken up by inedible hide, bones, gristle, entrails, horns, and hooves. Carrying such a low proportion of saleable meat, the bulky beef cow did not make for transport economics efficient enough to justify long-distance shipping, especially since cattle were apt to die or be injured in railroad cars and needed repeated watering and resting on a lengthy trip. On the other hand, unlike hogs, cattle didn't mind walking for long distances, feeding and watering themselves along the way. While the railroad network made Chicago into the new "Porkopolis" in the 1850s, most cattle still came to the big

⁶ Margaret Walsh, *The Rise of the Midwestern Meat Packing Industry* (Lexington: University Press of Kentucky, 1982), 39-54; Yeager, *Competition and Regulation*, 16-7; Cronon, *Nature's Metropolis*, 230-2; Giedion, *Mechanization Takes Command*, 229-46. The rest of this chapter will focus on beef rather than pork, but the consequent divergent developments of the two industries over the twentieth century are highly instructive; see Brian Kirby Page, "Agro-Industrialization and Rural Transformation: The Restructuring of Midwestern Meat Production," (Ph.D. diss., University of California-Berkeley, 1993), esp. Chapters 4, 6, and 7.

⁷ Ross, "Patterns of Diet," 192.

⁸ Cronon, *Nature's Metropolis*, 205-9, 225-8, Yeager, *Competition and Regulation*, 17.

cities of the Northeast via their own power, driven on the hoof over hundreds of miles from states like Virginia, Kentucky, and Ohio.⁹ The beef industry was barely impacted by the first waves of industrialization in the United States, making beef an expensive luxury for most consumers.

This situation would begin to change during the Civil War, when a surplus of cattle arose in the state of Texas. Cattle ranchers in that state were cut off from their Southern markets by Union blockades during the war, leaving the herds free to multiply. So many cattle were roaming the Texas plains by the end of the war that they had become nearly worthless in regional markets. In the East, however, the price of beef was high due partly to the inefficient marketing methods described above, but also because high wartime demand by Union soldiers had driven up the price of all foods. Suddenly it made economic sense to send Texas range cattle to Chicago, where they would bring ten times as much as in the South. As always, the cost of transportation remained a limiting factor, and certainly cattle that might be willing to walk from Virginia to Philadelphia would not fare so well on a trip from southern Texas to northern Illinois. Enterprising individuals like Joseph G. McCoy established trails and stockyards for cowboys to drive the cattle on hoof to railheads in Kansas towns like Abilene and Dodge City, allowing the cattle to be shipped by rail to Chicago without losing too much weight to make the trip unprofitable. For a quarter of a century, the "Old West" of cowboys and dogies on the open range captured the nation's imagination, but also transformed the city of Chicago into a major cattle depot where western livestock drovers and merchants met with eastern distributors, exchanging Texas longhorns for eastern dollars.¹⁰

The railroads connecting the cattle-producing regions of the West to Chicago sought to capture as many of those dollars as possible in the post-Civil War years. The high fixed costs of operating an extensive network required railroaders to seek as much traffic volume as they could to achieve lower unit costs. The burgeoning cattle industry of the late 19th century likewise depended on the attractive rates and special accommodations provided to livestock merchants by the railroads, and also needed the giant stockyards built by the railroads in cities like Chicago

⁹ Cronon, *Nature's Metropolis*, 225-6; Yeager, *Competition and Regulation*, 49-50; Ross, "Patterns of Diet," 197.

¹⁰ Cronon, *Nature's Metropolis*, 218-24; Jimmy M. Skaggs, *Prime Cut: Livestock Raising and Meatpacking in the United States, 1607-1983* (College Station: Texas A & M University Press, 1986), 50-61.

and Omaha.¹¹ But while railroads helped cattle production to increase in scale and scope in the 1860s and 1870s, beef slaughtering and distribution remained essentially pre-industrial.

Chicago was poised to become the beefpacking center of the nation, but as late as 1871 less than four percent of beef animals arriving in the city were packed there, the rest being shipped as live animals via railcar to butchers in the urban centers of the East.¹²

The development of the refrigerated railroad car made mass distribution possible for the first time in the 1880s. Beef slaughter began a geographical shift from the small butcher shops of the East to the enormous meatpacking factories of Chicago. Gustavus Swift was the key figure in this technological revolution. A New England farm boy, Swift moved to Chicago in 1875 intending to find a cheaper source of beef animals for his family's butcher shops back East. After shipping a number of loads of live cattle at a loss, Swift tried shipping carcasses—or "dressed beef"—via open-sided railroad cars during winter months to prevent putrefaction. The experiment proved so profitable that Swift determined to find a way to ship only dressed beef, thereby eliminating the cost of transporting the 55 to 60 percent of a cow's weight that could not be eaten. Building on the work of earlier inventors and entrepreneurs such as George Hammond, Swift hired engineer Andrew Chase to perfect the refrigerated railcar. Designed in 1878, Swift's railcar used an innovative combination of insulation and ventilation to send a blast of cold air over an ice bunker and into the car, providing cool, dry air that reliably kept beef carcasses fresh between Chicago and New York, even during summer. By 1884, Swift was the largest shipper of dressed beef in the country, with a host of competitors—particularly giant Chicago porkpackers George Hammond, Nelson Morris, and Philip Armour—recognizing the profit potential of the new beef distribution method.¹³

Dressed beef was cheap beef. In 1882, *Harper's Weekly* celebrated the erection of a dressed beef warehouse in the West Washington Market in Manhattan, declaring that the "era of

¹¹ Yeager, *Competition and Regulation*, 27-47; Steven W. Usselman, *Regulating Railroad Innovation: Business, Technology, and Politics in America, 1840-1920* (New York: Cambridge University Press, 2002), 283-4.

¹² Yeager, *Competition and Regulation*, 17; Cronon, *Nature's Metropolis*, 232.

¹³ Yeager, *Competition and Regulation*, 49-59; Cronon, *Nature's Metropolis*, 233-4; John H. White, Jr., *The American Railroad Freight Car: From the Wood-Car Era to the Coming of Steel* (Baltimore: Johns Hopkins University Press, 1995), 270-283.

cheap beef has begun for New York."¹⁴ Indeed, the reduced transportation costs of dressed beef allowed the Chicago packers to sell beef in New York at prices approximately 5 to 10 percent lower than local slaughterers.¹⁵ But the mass distribution of cheap dressed beef was no simple task. Refrigerator cars required constant supervision and re-icing along the four-day journey to the East. In an age before cost-effective mechanical ice-making machinery, Swift and the other dressed beef shippers were compelled to purchase ice harvesting rights on the Great Lakes and build icing stations along the route.¹⁶ Upon arrival, the dressed beef had to be distributed immediately to avoid spoilage. Swift's solution to this problem was the branch house system—by building or purchasing cold storage stations in eastern cities and towns, Swift created a guaranteed internal market for his dressed beef. Branch houses received carloads of dressed beef, then immediately distributed the meat to local retailers before spoilage set in. For instance, a man named Marcel Weill worked for a major meatpacker's branch house in Kansas City in the 1910s; his job consisted of calling every retail butcher in his region of the city each day at 6am, then delivering the carcasses with a Ford Model T.¹⁷ In 1900, Swift owned 193 such branch houses, located primarily in towns and cities throughout the Midwest and Northeast.¹⁸

The success of dressed beef marketing relied on a scale of production and distribution unprecedented in the fresh food business. Only through large-scale technological systems could the dressed beef packers achieve the low prices needed to overcome resistance to the new product. Eastern consumers saw dressed beef from Chicago as an inferior product, delivered over a thousand miles by an unseen butcher and touched by an unknown number of filthy railroad men; only a very low price was enough to convince them it was worth the risk of food poisoning. Eastern butchers, meanwhile, saw dressed beef as a direct threat to their livelihood, and not only helped to promote the idea that dressed beef was tainted, but often refused to carry it in their wholesale meat markets. Railroads were also uncooperative in helping dressed beef to

¹⁴ "Cheaper Beef," *Harper's Weekly*, Oct. 21, 1882, 663, quoted in Lewis Corey, *Meat and Man: A Study of Monopoly, Unionism, and Food Policy* (New York: Viking Press, 1950), 40.

¹⁵ Cronon, *Nature's Metropolis*, 235.

¹⁶ Oscar Edward Anderson, Jr., *Refrigeration in America: A History of a New Technology and Its Impact* (Princeton: Princeton University Press, 1953), 145-6, 148-9; Cronon, *Nature's Metropolis*, 235; Yeager, *Competition and Regulation*, 61.

¹⁷ Mrs. Sam Ray, "Postcard from Old Kansas City," *Kansas City Times*, Oct. 5, 1984, A14. Prior to automobiles the meat would have been delivered by horse and wagon.

¹⁸ Yeager, *Competition and Regulation*, 60.

succeed. In their effort to increase traffic volume in the West during the 1860s and 1870s, railroads had made large investments in the infrastructure of livestock movement—livestock cars and urban stockyards—and rightfully saw the dressed beef system making this equipment obsolete while taking away half of their western routes' most voluminous cargo.

Facing such resistance, the Chicago packers were forced to erect their own infrastructure to bypass the wholesale butchers and railroads. Branch houses not only solved the problem of quick distribution of fresh beef as noted above, but also helped the packers avoid reliance on wholesale butchers. To deal with the railroads who refused to provide refrigerated railcars, Swift and his competitors built their own. Swift also found an ally in the Canadian Grand Trunk Railroad, which unlike the New York Central or the Pennsylvania Railroad had no significant investments in the livestock business, to get its dressed beef through to New York. But building a tightly integrated technological system for fresh beef distribution was not enough on its own. Because dressed beef could only compete with locally slaughtered beef on the basis of price, the technological system had to be enormous to achieve the economies of scale that would allow low consumer prices. Only then could dressed beef become a widely accepted food product that was also profitable for the packers.¹⁹ The introduction of the refrigerated railcar sowed the seeds of monopoly²⁰ in beefpacking.

From the beginnings of dressed beef in the 1880s to World War I, a handful of Chicago meatpackers sought to dominate the entire trade. This handful of companies—known as the "Big Five"²¹ and represented most impressively by Swift and Armour—consistently chose to invest their profits in expanding the infrastructure of mass distribution. By 1917, Swift had a branch house system of 367 units; the Big Five together operated 1,120 branch houses.²² As **Map 3.1** illustrates, the Big Five dominated the wholesale distribution of beef not only in major cities

¹⁹ Corey, *Meat and Man*, 46–9; Yeager, *Competition and Regulation*, 61–77; Cronon, *Nature's Metropolis*, 236–47.

²⁰ I should make it clear that when using the term "monopoly," I actually mean "oligopoly," since there were several firms involved in controlling the beef market, not just one. However, the *Oxford English Dictionary* shows that the term "oligopoly" did not receive widespread usage until at least 1933, so to avoid anachronism and improve readability for non-economists, I will use "monopoly." The same applies for the term "monopsony," introduced below.

²¹ I will use the phrase "Big Five" through the rest of this section to avoid confusion. Originally, there existed only a "Big Four" of companies—Swift, Armour, Hammond, and Morris—that successfully mass marketed dressed beef. Sulzberger & Sulzberger joined the field in 1897; it was renamed Wilson in 1916. Hammond was acquired by Armour in 1901, but the entrance of the Cudahy company to the field in 1900 kept the number at five. Later the "Big Five" would become the "Big Four" when Morris merged with Armour in 1923.

²² Yeager, *Competition and Regulation*, 260–1.

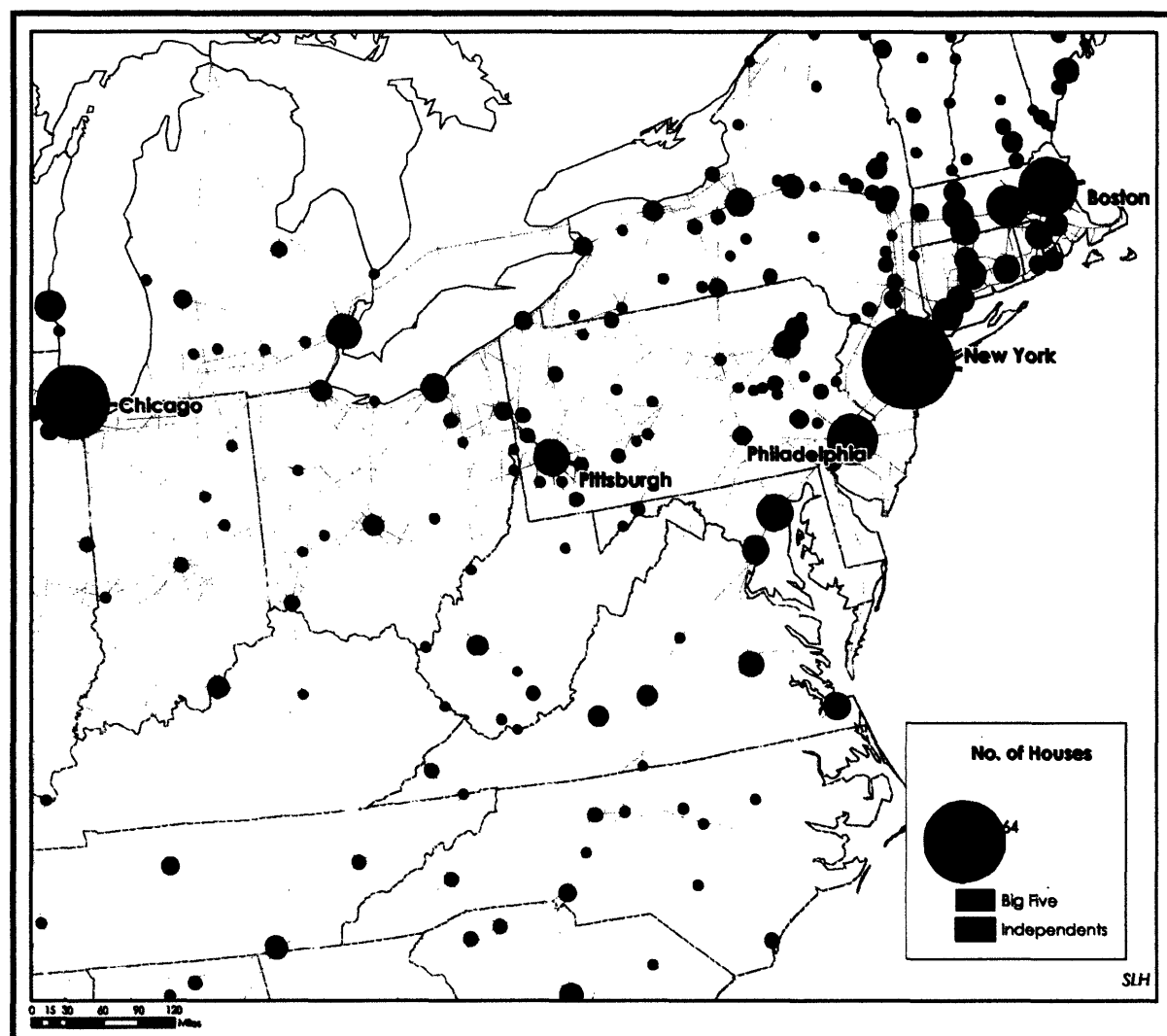
such as New York, Boston, and Philadelphia, but also in the smaller cities located on railroad lines throughout the Northeast and Mid-Atlantic. Independent meatpackers were not entirely shut out from the branch house system, but their footholds were limited primarily to the largest cities, where their branch houses were little more than nearby extensions of their packing plants. This was because the Big Five also owned most of the railroad car routes connecting packing houses to distant branch houses—in 1918, the Big Five owned 90% of such routes, making it nearly impossible for smaller packers in either big Eastern cities or deep in the Midwest to market their product over a long distance.²³ By maintaining this stranglehold on the infrastructure of distribution, the Big Five achieved control of 73 percent of the nation's interstate meat trade by 1916, allowing the packers to maintain steady prices of retail cuts of meat across several states at a time.²⁴ Significantly, most of the profits gained by the big packers through their monopoly power were immediately reinvested in their distribution systems—building more branch houses and refrigerator cars—in order to gain economies of scale and increase their control over marketing.²⁵ Beef marketing required, by 1916, "an enormous organization with very large overhead expenses."²⁶

²³ Richard J. Arnould, "Changing Patterns of Concentration in American Meat Packing, 1880-1963," *Business History Review* 45 (Spring 1971): 20. The Big Five also used their refrigerator cars to run "peddler routes" into the rural West, selling dressed beef to compete directly with the independent packers in the only areas where independents had any significant branch house systems. Federal Trade Commission, *Report of the Federal Trade Commission on the Meat-Packing Industry*, part III (Washington: GPO, 1919), 122-5.

²⁴ Federal Trade Commission, *Report*, part III, 116; Cronon, *Nature's Metropolis*, 245.

²⁵ Corey, *Meat and Man*, 75.

²⁶ Federal Trade Commission, *Report*, part III, 117.



Map 3.1: Meatpacker Branch Houses in 1916

The Big Five maintained monopoly control over beef distribution in both large and small eastern and midwestern cities by strategically locating branch houses along major rail lines. Source: FTC, *Report on the Meat Packing Industry*, part III, 129.

Profitable dressed beef marketing also demanded a steady supply of cattle. The large capital investments required to make mass distribution cost effective made it necessary for the packers to slaughter unprecedented numbers of cattle. Unfortunately, cattle slaughter, unlike hog slaughter, was not very technologically advanced in the late 19th and early 20th century. While the disassembly line allowed for an impressive division of labor in the mass production of pork products, cattle slaughter required significant skilled manual labor—particularly to remove

the animal's hide without damaging valuable meat, a time-consuming process which required the carcass to be taken off the otherwise continuously moving production line.²⁷ The key factor in industrializing beef production was increasing the *scale* of production, not improving efficiency in productivity. To achieve such scale, the Big Five needed cattle, and to get cattle, they needed stockyards.

This was the reason for Chicago's dominance of the beef trade by the 1890s. With its giant Union Stock Yard, built in 1865, Chicago had a reliable source of cattle from the range country of the west. To further assure the reliability of supply, the Big Five packers began investing in stockyards, not only in Chicago, but also in other major cattle marketing cities such as Kansas City, St. Louis, and Omaha.²⁸ These investments did not always require the packers to lay out any significant cash payment to gain capital stock in the yards. Because the arrival of a packing plant adjacent to a stockyard was likely to increase the business of the yard, packers often received shares in the yard at no cost as an incentive to build a plant there.²⁹ By 1916, the Big Five owned a majority of shares in twenty-two of the fifty largest central stockyards, with more than eight of every ten cattle passing through yards in which the big packers held an interest.³⁰ Particularly, the Big Five maintained significant control of the four largest yards in Chicago, Kansas City, St. Louis, and Omaha, where they slaughtered over half of all animals sold.³¹ As **Maps 3.2 and 3.3** illustrate, the Big Five located their slaughtering plants strategically in the railroad centers that connected the marketing channels of the populated East with the livestock production areas of the West.

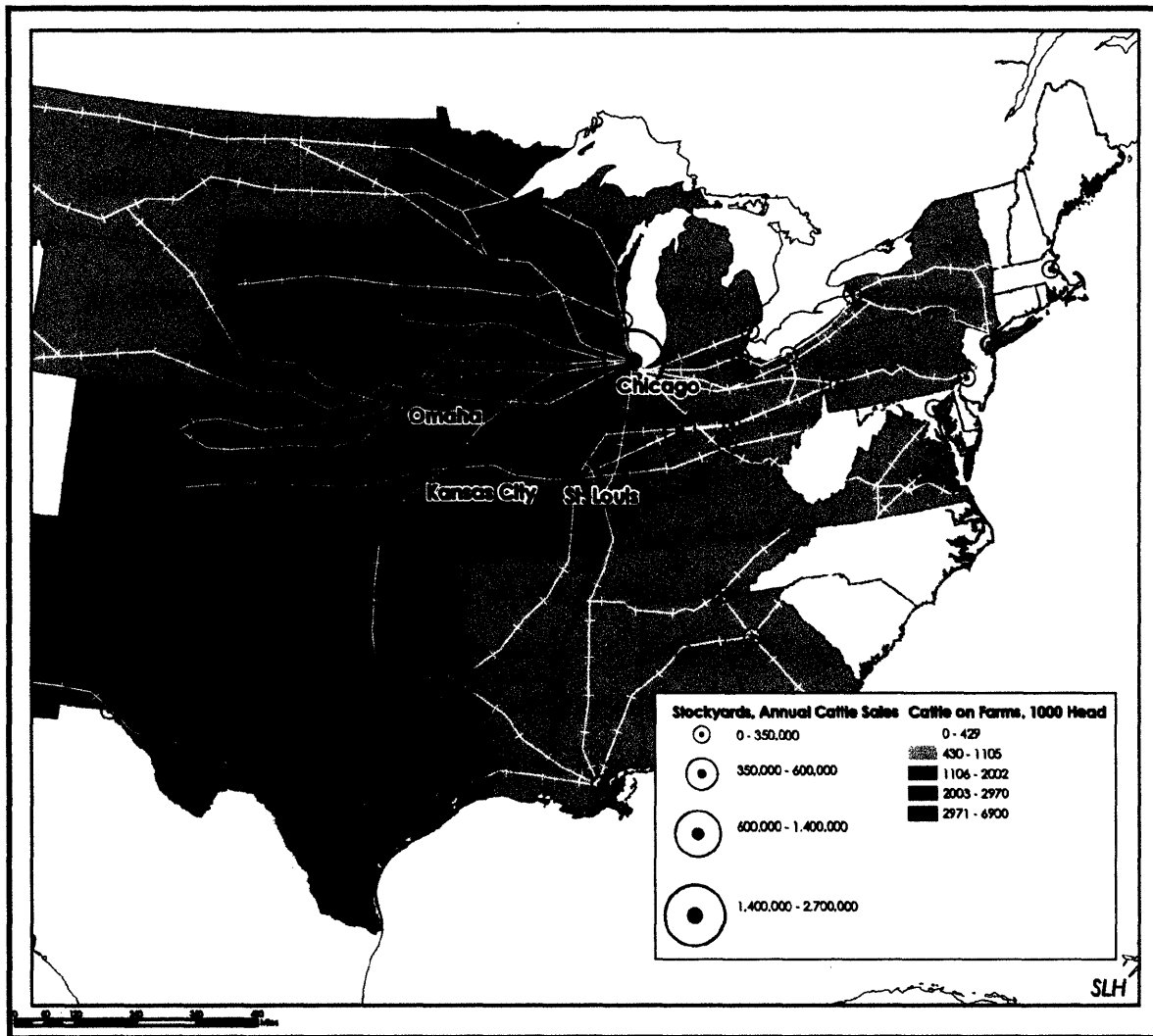
²⁷ Roger Horowitz, *Negro and White, Unite and Fight!: A Social History of Industrial Unionism in Meatpacking, 1930-90* (Urbana: University of Illinois Press, 1997), 17-20, 250.

²⁸ Corey, *Meat and Man*, 43.

²⁹ Armour, for instance, received a \$500,000 stock bonus in the Kansas City Stockyards for locating a packing plant in that city in the early 1890s. Charles L. Wood, *The Kansas Beef Industry* (Lawrence: University Press of Kansas, 1980), 164.

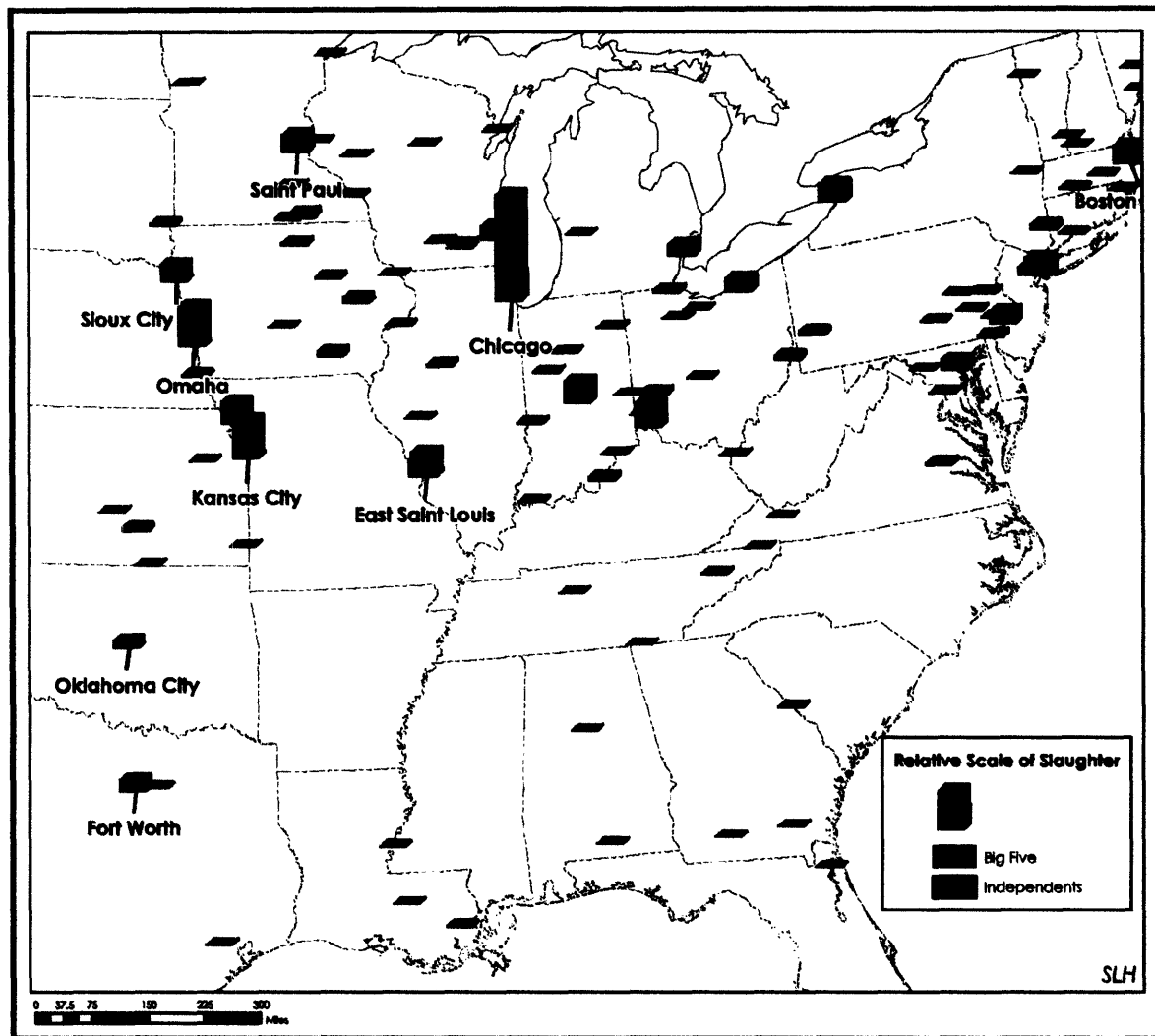
³⁰ Federal Trade Commission, *Report*, part III, 11; Arnould, "Changing Patterns," 22.

³¹ Federal Trade Commission, *Report*, part III, 15.



Map 3.2: Stockyard Locations and Beef Cattle on Farms in 1916

The Big Five maintained monopsony control over cattle buying by locating stockyards in Midwestern cities connected by rail to the major cattle-feeding states of Iowa, Nebraska, Kansas, and Texas. Sources: FTC, *Report on the Meat Packing Industry*, part III, 14-15; USDA, National Agricultural Statistics Database.



Map 3.3: Meatpacker Factories in 1916

The Big Five owned the largest meatpacking factories in 1916, locating them strategically in cities such as Chicago and Kansas City which lay on rail lines connecting the beef ranges of the West with the consuming centers of the East. Independent packers continued to dominate in states such as Ohio where porkpacking took precedence over beef. Sources: FTC, *Report on the Meat Packing Industry*, part III, 26.

The Big Five's control of stockyards allowed a relatively small number of cattle buyers to have a disproportionate control over the price of livestock offered for sale. Economists call this situation of control by the few over buying prices "monopsony," and it became clear by 1916 that the Big Five had established monopsony power over livestock buying that rivaled their monopoly power over selling prices in beef marketing. The geographic concentration of the

packers and stockyards contributed to this monopsony power, because after cattle prices were established each morning at the four major terminal markets in Chicago, Kansas City, Omaha, and St. Louis, those prices were immediately telegraphed to all the smaller yards in the rest of the country.³² Livestock sellers repeatedly complained that packer buyers at the major urban stockyards used short weights, excessive yardage fees, and wild swings in price from one day to the next to manipulate the price of cattle.³³ For instance, a Kansas livestock feeder in 1918 received a call from the yards in St. Joseph, Missouri, to ship as many cattle as possible for immediate slaughter. Sorting and loading a large cattle shipment took time, so the livestock feeder only managed to send four railcars on the first day, for which he received \$14.85 per hundredweight. The next day he shipped the remaining 33 carloads, but received only \$13.00 per hundredweight for the same quality of cattle—a price drop of \$20 per head that made him regret the shipment.³⁴

In popular discourse, the moniker "Beef Trust" represented all that was despised about this combination of monopoly and monopsony power. Most of the opposition came from economic interest groups whose livelihoods suffered from the dressed beef trade—railroad managers who lost livestock traffic, eastern butchers who were undersold, livestock producers who felt cheated at the central markets. The ire of these interest groups was one factor leading Congress to pass the Sherman Antitrust Act in 1890, intended to prevent firms such as the Big Five from colluding to administer prices.³⁵ Like other businesses, however, the meatpackers responded to the Sherman Act by attempting to formalize their price-fixing agreements by forming a holding company.³⁶ Although the meatpackers were never as successful as Standard Oil or U.S. Steel in their efforts to reduce competition amongst themselves, their unquestioned dominance of the meatpacking trade made them a constant target of antimonopoly efforts by the

³² Federal Trade Commission, *Report*, part III, 15.

³³ *Ibid.*, 85-116; Wood, *Kansas Beef Industry*, 165. Yardage fees were the charges assessed for unloading, feeding, watering, and holding cattle in the stock pens until slaughter.

³⁴ Wood, *Kansas Beef Industry*, 178-9.

³⁵ Arnould, "Changing Patterns," 23-4; Yeager, *Competition and Regulation*, 111-33.

³⁶ On the merger movement that followed the passage of the Sherman Antitrust Act, see Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Harvard University Press, 1977), 319-44.

federal government.³⁷ The Justice Department filed an antitrust suit against the meatpackers in 1902, and then again in 1911 after an investigation ordered by President Theodore Roosevelt.³⁸

Formal antitrust efforts by the federal government in this period were complemented by a widespread popular unrest with the power of the Big Five to control cattle and beef prices. In a best-selling 1905 book, journalist Charles Edward Russell famously labeled the meatpackers the "Greatest Trust in the World" for their "great brute strength."³⁹ Consumer meat boycotts were a regular feature of the period. Even though dressed beef was generally cheap beef, the apparent ability of the "Beef Trust" to set prices based on their costs rather than according to the laws of supply and demand led consumers in cities throughout the country to blame the trust for any rise in price.⁴⁰ Organizations such as the Ladies' Anti-Beef Trust Association, formed in New York in 1902 to protest a fifty-percent rise in meat prices, pointed an accusing finger at "the Trust" for "taking meat from the bones of your women and children."⁴¹ Many consumers felt they simply could not trust the Beef Trust, located hundreds or thousands of miles away from the neighborhood meat shop. This was most famously illustrated by the public response to Upton Sinclair's 1906 exposé of the Chicago meatpackers in his novel *The Jungle*. Intending to illustrate the plight of immigrant workers in the packinghouses, Sinclair instead disgusted his middle-class readers with images of rats scampering about the kill floors and below vats of adulterated sausages. The book consequently helped lead to the 1906 passage of the Pure Food and Drug Act and the Meat Inspection Act, but did not inspire the socialist political movement Sinclair had hoped for; as he later quipped, "I aimed at the public's heart and by accident I hit it in the stomach."⁴² Nonetheless, Sinclair's work added to the growing consumer displeasure with

³⁷ The packers created a series of pools, the two most important being the Veeder Pool (1893-96, 1898-1902) and the National Packing Company (1903-1912), but cooperation from each of the major packers was difficult to maintain; each packer always had an incentive to try to undercut his competitors who were attempting to sustain higher prices. Yeager, *Competition and Regulation*, 135-95.

³⁸ Arnould, "Changing Patterns," 24. The result of the 1902 suit was a U.S. Supreme Court injunction against the Veeder Pool in 1903; the 1911 charge led to a "not guilty" verdict, but the Justice Department convinced the packers to voluntarily dissolve the National Packing Company.

³⁹ Charles Edward Russell, *The Greatest Trust in the World* (New York: Ridgway-Thayer, 1905), 5, quoted in Skaggs, *Prime Cut*, 101.

⁴⁰ Meg Jacobs, *Pocketbook Politics: Economic Citizenship in Twentieth-Century America* (Princeton: Princeton University Press, 2005), Chapter 1.

⁴¹ Paula E. Hyman, "Immigrant Women and Consumer Protest: The New York City Kosher Meat Boycott of 1902," *American Jewish History* 70 (Sep. 1980): 94, quoting *New York Daily Tribune*, May 17, 1902, 1.

⁴² Upton Sinclair, *The Jungle* (Urbana: University of Illinois Press, 1988 [1906]); quote from Upton Sinclair, *Autobiography* (New York: Harcourt, Brace, 1962), 126. See also Skaggs, *Prime Cut*, 118-29.

the distant, unseen meatpackers and their power to affect daily food choices in nearly every city in America.

The Big Five achieved the height of their unpopularity during World War I. Consumer concern over the rising cost of living dominated the domestic politics of the war, with inflated food prices inflicting painful sacrifices for working-class and middle-class consumers alike. Attacks on the Beef Trust shifted from concerns about food adulteration to the problem of monopoly control over prices. President Woodrow Wilson created a Food Administration, headed by future President Herbert Hoover, to try to reign in the skyrocketing costs of foods, primarily through voluntary conservation efforts such as "Meatless Tuesdays."⁴³ When voluntary conservation proved relatively ineffective at slowing the rise in meat prices, Hoover ordered meatpackers to take no more than nine percent profit. Even so, meat prices doubled through the war, and for many consumers the Beef Trust appeared at fault.⁴⁴ Added to this consumer unrest was the anger of western cattle producers fed up with the packers' control of stockyards and cattle prices. Major livestock associations, including the Kansas Livestock Association and the American National Cattlemen's Association, held meetings in 1916 demanding that President Wilson direct the Federal Trade Commission (FTC) to investigate the profits of the packing industry.⁴⁵ At first fearful that such investigations would lead to lower meat production, impairing the war effort, Wilson finally caved to the pressure from consumers and farmers, directing the FTC in 1917 to open the books of the packers and determine whether the Big Five had unduly profited from wartime conditions.⁴⁶

The FTC report on the meatpacking industry, published in five thick volumes from 1918 to 1920, confirmed the worst suspicions of consumers and cattlemen alike. The Big Five had gained "enormous" profits during the war, averaging 4.6 percent return on each dollar invested, or 350 percent more than prewar earnings.⁴⁷ In terms of net profit on sales, this translated to 15 percent, in direct defiance of the Food Administration's 9 percent limit. The packers responded

⁴³ Jacobs, *Pocketbook Politics*, Chapter 2.

⁴⁴ Skaggs, *Prime Cut*, 87.

⁴⁵ Wood, *Kansas Beef Industry*, 174-5.

⁴⁶ Jacobs, *Pocketbook Politics*, Chapter 2; Wood, *Kansas Beef Industry*, 175.

⁴⁷ Federal Trade Commission, *Report of the Federal Trade Commission on the Meat-Packing Industry, part I* (Washington: GPO, 1919), 72.

by running nationwide advertising campaigns claiming that their profits represented only a couple of cents on each consumer dollar, but as the FTC pointed out, the enormity of the packers' operations allowed them to transform what seemed like "a very small element of value" into huge profits.⁴⁸ The FTC also supported the cattle raiser's belief that packers manipulated the price of livestock, employing "a vicious system of ... price cutting" to prevent farmers from receiving their fair share of the consumer's dollar.⁴⁹ The FTC recommended sweeping government action to restore competition to cattle buying and beef marketing—outright public ownership of railroad livestock and refrigerator cars, terminal stockyards, and branch houses.⁵⁰ Congress opted not to undertake this potentially expensive populist solution, and instead the Justice Department began antitrust proceedings against the Big Five in 1919. Facing both popular anger and the strongest government threat to date, the meatpackers capitulated in 1920, signing the famous Consent Decree. Under this agreement, the packers would not be prosecuted for violations of antitrust laws if they divested of their holdings in terminal stockyards, pulled out of the retail meat business, and ended any other efforts to conspire to restrain interstate trade.⁵¹

Over the next several decades, the Consent Decree would prove to be a paper tiger with no teeth. The big packers continued to expand their ownership of refrigerated railcars and branch houses in an effort to maintain market share. This effort was generally successful, since in 1921 the major packers' share of meat sales was 64 percent, in 1929 it was 55 percent, and in the 1930s it hovered around 60 percent—meaning that even as the population grew and meat consumption rose, the big packers raised their volume of sales proportionally.⁵² Despite the Consent Decree's prohibition of mergers, the packers also continued to absorb their competitors; in 1923, the Big Five became the Big Four when Armour bought out Morris.⁵³ The

⁴⁸ Federal Trade Commission, *Report of the Federal Trade Commission on the Meat-Packing Industry*, part V (Washington: GPO, 1920), 12-3.

⁴⁹ Federal Trade Commission, *Report*, part I, 68-70.

⁵⁰ Federal Trade Commission, *Report*, part I, 26.

⁵¹ Skaggs, *Prime Cut*, 106-7.

⁵² Corey, *Meat and Man*, 89.

⁵³ Arnould, "Changing Patterns," 25; Skaggs, *Prime Cut*, 152.

packers also proved loath to dispose of their holdings in the public stockyards that provided them with their cattle supplies; by 1925, they had only sloughed one-quarter of their yards.⁵⁴

The packers' defiance pushed livestock producers to petition Congress for additional regulations. Seeking to "restore public confidence" in the federal government's ability to restrain the Beef Trust, Congress passed the Packers and Stockyards Act of 1921.⁵⁵ The Act was intended to supplement the Consent Decree by conferring broad antitrust powers to the Secretary of Agriculture to prevent packers from abusing either farmers or consumers. The intent of the Act became further clarified in 1922 when the Supreme Court affirmed its constitutionality, with Chief Justice William Howard Taft arguing that the "chief evil feared is the monopoly of the packers, enabling them unduly and arbitrarily to lower prices to the shipper who sells, and unduly and arbitrarily to increase the price to the consumer who buys."⁵⁶ In practice, however, the Packers and Stockyards Act proved rather friendly to both the packers and the stockyards. Secretary of Agriculture Henry C. Wallace publicly declared in 1922 that his Department would "not assume that men are rascals until they have been proved to be such. We take it for granted that the various people who are under the supervision of this law will be glad to co-operate with us."⁵⁷ Significant action was also hampered by the design of the Act, which required tedious case-by-case legal-style examination of alleged infractions by packers, without specifying the actual infractions. Meatpacking firms could not be sure if a practice would be considered illegal until they got caught using it.⁵⁸ The USDA did effectively implement the sections of the Act requiring stockyards to register as quasi-public utilities, maintain proper weights and measures, and publicly post rates for yardage fees after consultation with the Secretary.⁵⁹ But for the next

⁵⁴ Skaggs, *Prime Cut*, 152.

⁵⁵ Wood, *Kansas Beef Industry*, 266.

⁵⁶ *Stafford v Wallace*, 258 U.S. 495 (1922), 514-6.

⁵⁷ "Expects Packers to Help," *New York Times* (hereafter NYT), May 15, 1922, 8. For a list of the relatively few major indictments of the meatpackers by the USDA under the Packers and Stockyards Act from 1921 to 1958, see Senate Committee on Agriculture and Forestry, *Regulation of the Meat Industry: Hearings*, 85th Cong., 2nd sess., Apr. 17, 1958, 15-24.

⁵⁸ Department of Justice, Attorney General's Committee on Administrative Procedures, *Administrative Procedure in Government Agencies: Part 11, Administration of the Packers and Stockyards Act*, Department of Agriculture, 76th Cong., 3rd sess., 1940, S. Doc. 186, pp. 6-7, 17-18.

⁵⁹ Department of Justice, *Administrative Procedure*, Part 11, 2-5, 18; Skaggs, *Prime Cut*, 157. In 1923, the Act was further amended to require livestock dealers at public stockyards to be bonded by the USDA to assure producers that the dealers were solvent enough to actually pay for the stock they purchased. "Bonds Live Stock Dealers," NYT, Jun. 25, 1923, 22.

decade, livestock producers continued to complain bitterly that packer buyers used their monopsony power to manipulate cattle prices. A livestock commission merchant wrote to Senator Burt K. Wheeler in 1933 describing the methods used by packers to hold down prices at the terminal stockyards: "They compare notes daily, and it is common knowledge that the buyers all come out with the same kind of orders of a morning as to whether or not they are to try to make their purchases lower, and the exact amount they are to take off if they can break prices."⁶⁰ The problem of monopoly had become a significant state concern, but had not yet produced any effective state action.

Trucking and the Dismantled Monopoly, 1930s-1950s

The failure of the antitrust efforts of the early twentieth century stemmed not so much from a lack of state power, but from the fundamental technological and economic structures of the new beef industry. The economics of distributing highly perishable fresh beef demanded enormous capital investment to maintain a tightly integrated technological system. Only giant firms could achieve the economies of scale necessary to make the system work.⁶¹ Consequently, the problem of monopoly was an acknowledged but intractable political problem by the early 1930s. The onset of the Great Depression brought a renewed urgency to the problem of monopoly, however. Consumers experienced high meat prices at a time of low incomes, while livestock raisers saw cattle values drop below the cost of raising the animals. Both groups blamed the Beef Trust, and called for the federal government to carry out the intent of the Consent Decree of 1920 and the Packers and Stockyards Act of 1921. Ironically, while livestock producers called for increased government efforts to dismantle the Beef Trust, they made no corresponding calls for a system of "orderly marketing" like that used to regulate milk production during the New Deal. Agricultural policymakers—especially Secretary of Agriculture

⁶⁰ S. McKenna (President, Union Bank and Trust Company) to Senator B. K. Wheeler, Nov. 7, 1933, Secretary of Agriculture Records, RG 16, General Correspondence, Entry 17, National Archives II, College Park, MD (hereafter cited as RG 16, Entry 17), Box 1826, Folder 6.

⁶¹ The beef industry in this respect was not unlike railroads or electric utilities. See Colleen A. Dunlavy, *Politics and Industrialization: Early Railroads in the United States and Prussia* (Princeton: Princeton University Press, 1994); Thomas Parker Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore: Johns Hopkins University Press, 1983).

Henry A. Wallace (the son of Henry C.)—were caught between a rock and a hard place. On the one hand, consumers and farmers demanded that the USDA dismantle the meatpacking monopoly; but on the other hand, the agency was prevented from using state power to prevent the packers from being the only arbiters of beef prices. As it turned out, the growth of trucking helped to achieve the desired policy results. By the mid-1950s, the locus of marketing power in the beef industry had shifted from the packers to livestock producers, while the rise of thousands of small, independent meatpackers realigned the geography and politics of beef pricing.

Direct Marketing

Dust and depressed prices dominated livestock raising in the early 1930s. Unlike many farmers, cattlemen had done relatively well during the agricultural depression of the 1920s.⁶² Disaster struck from 1929 to 1933, however, when livestock raisers saw their incomes drop by more than half. Particularly in the Dust Bowl of the southern Plains, cattle died of starvation and thirst, while those that survived were often so underfed they brought almost no money at market.⁶³ But unlike organized dairy farmers producing bottled milk, western cattle raisers were almost universally opposed to gaining higher prices through government regulation of marketing or planning of production under the AAA. This did not mean they were opposed to government help, of course; ranchers certainly appreciated federal land subsidies, generous credit terms, tariffs on imported livestock, and efforts to eradicate tick fever, foot-and-mouth disease, and wolves.⁶⁴ As one historian has referred to ranchers' ideas about the New Deal, "They wanted help, but not controls; they hankered after a handout without regulation."⁶⁵

Some livestock raisers had doubts, however, when they realized the AAA policy of supporting grain prices meant the cost of feeding cattle would rise. A livestock raiser in Boise City, Oklahoma, wrote to Secretary of Agriculture Henry A. Wallace in July of 1933, asking why

⁶² Skaggs, *Prime Cut*, 131-7. On the depression of the '20s, see James Shideler, *Farm Crisis, 1919-1923* (Berkeley: University of California Press, 1957).

⁶³ Wood, *Kansas Beef Industry*, 188-93; Corey, *Meat and Man*, 137. On the Dust Bowl, see Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979).

⁶⁴ Skaggs, *Prime Cut*, 134-5; Corey, *Meat and Man*, 131.

⁶⁵ John T. Schlebecker, *Cattle Raising on the Plains, 1900-1961* (Lincoln: University of Nebraska Press, 1963), 136.

the AAA surplus reduction programs had to "go the limit" on grains, driving up the price of feeds for livestock raisers like himself who grew "neither grain nor grass."⁶⁶ In response to such pleas, Congress passed the Jones-Connally Act of 1934 to make cattle a basic commodity under the AAA, and therefore eligible—like milk—to be included in marketing agreements that would raise prices for farmers. This Act was never put into effect, however, partly because funds from the Federal Emergency Relief Administration and the Drought Relief Service were used from 1933 to 1936 to buy up sick and dying cattle to provide free meat for unemployed workers on relief. The relief purchases reduced cattle numbers and improved farmers' prices, but even by 1940 cattlemen received incomes 20 percent lower than they had in 1929.⁶⁷

Despite the difficulties cattlemen experienced during the early 1930s, there was no New Deal for beef raisers. But two fundamental factors of political economy provide more likely explanations for livestock producers' lack of support for state economic planning.⁶⁸ First, the vast majority of cattlemen in the United States from the late 19th century to the late 1960s were not ranchers on vast tracts of the western and southern plains. Most cattle producers were instead Corn Belt producers, on relatively small plots of land, who generally fed less than 200 head of cattle as part of a mixed farming operation. In the late 19th century, after Euro-American pioneers had broken the prairies of the Mississippi River valley and replaced native grasses with corn and wheat, many farmers found livestock raising to be a convenient adjunct to grain farming.⁶⁹ Corn Belt cattle feeders would buy young "stocker" cattle from ranchers on grasslands farther west, then confine them in small feedlots to eat corn until they reached a profitable weight. These grain-fed "fattened" or "finished" steers generally brought good prices

⁶⁶ L. K. Bangerter to Henry A. Wallace, Jul. 29, 1933, RG 16, Entry 17, Box 1826, Folder 6.

⁶⁷ Henry A. Wallace to Harry Hopkins, Dec. 20, 1933, RG 16, Entry 17, Box 1771, Folder 14; Agricultural Adjustment Administration, Press Release, "Cattle Buying in Emergency Drought Areas to Start Friday," May 30, 1934, RG 136, Legal Desk File of Jerome N. Frank, Entry 40, National Archives II, College Park, MD, Box 3, Folder 2; Philip G. Murphy to Chester C. Davis, May 17, 1934, *ibid.*; Franklin D. Roosevelt, Executive Order 6747, "Allocating Funds to Meet the Emergency and Necessity for Relief in Stricken Agricultural Areas," Jun. 23, 1934, *ibid.*; Wood, *Kansas Beef Industry*, 238-42; Schlebecker, *Cattle Raising*, 137-42, 152, 162; Skaggs, *Prime Cut*, 144; Corey, *Meat and Man*, 137.

⁶⁸ My argument directly contradicts the idea that the lack of government regulation of the cattle economy can be attributed to the conservatism of western cattlemen, who have been proud to identify themselves as "a social class ... that unif[ies] in a single code of citizenship the traditions of our forefathers for freedom, independence, opportunity, resourcefulness and rugged individuality." Dan Casement, speaking to the American National Cattlemen's Association in 1948, quoted in Charles L. Sonnichsen, *Cowboys and Cattle Kings: Life on the Range Today* (Norman: University of Oklahoma Press, 1950), xiii-xiv.

⁶⁹ Allen G. Bogue, *From Prairie to Corn Belt: Farming on the Illinois and Iowa Prairies in the Nineteenth Century* (Chicago: University of Chicago Press, 1963), 86-100, 103, 123-4, 130-1.

from certain customers, especially managers of upper-crust hotels, who happily paid extra for the highly marbled, tender beef.⁷⁰ But even if cattle prices were not high, feeding one's own grain to one's own cattle was often an effective economic safety net. The cattle provided a "home market" for grains when prices dropped too low to justify the cost of shipping to grain elevators, and besides, feeder cattle provided piles of rich manure to fertilize fields.⁷¹ This was a crucial factor shaping the political economy of livestock feeding through most of the twentieth century. Midwestern cattlemen relied on fluctuations in the prices of grains and cattle in order to make their profits; the last thing they wanted from government policymakers was regulation or subsidy of prices that would disturb the game of supply-and-demand.

The second fundamental factor of the political economy of beef production was the "cattle cycle." The biology and ecology of beef cattle production have created continuous boom-and-bust cycles that have posed (and continue to pose) fundamental challenges to any state efforts to stabilize prices over the long run. The biology of the beef cow has defied most efforts to significantly speed up the process of turning a newborn calf into a fattened steer; the process has always taken at least two years, often several more. The ecology of cattle raising requires much of this time to be spent on large expanses of grassland. Cattle ranchers must invest in giant plots of range land that can serve no economically useful purpose other than providing grass for meat animals. As a consequence, all ranchers attempt to fill their land with as many cattle as they can until disastrous price drops force them to cull their herds. But because several years lapse before a rancher's decision to reduce production results in fewer fattened cattle, price changes consistently lag behind changes in cattle supplies. The result is a never-ending cattle cycle of 10 to 12 years, in which the first 6 to 7 years see livestock raisers expanding production as prices rise, then 4 to 5 years of declining production when prices fall due to oversupply.⁷² The cattle

⁷⁰ Cronon, *Nature's Metropolis*, 222, 236.

⁷¹ J. S. Cotton, Edmund Thompson, and Jay Whitson, "Cost of Fattening Cattle," in *Report of the Federal Trade Commission on the Meat-Packing Industry*, part VI (Washington: GPO, 1920), 64, 55-132.

⁷² This phenomenon has been known for at least a century, but it was agricultural economist Mordecai Ezekiel who first provided a coherent theory to explain its persistence. The theory is called the "cobweb theorem" because when production decisions are plotted through time, superimposed over a graph of supply and demand curves, an image resembling a spider's cobweb appears. Mordecai Ezekiel, "The Cobweb Theorem," *Quarterly Journal of Economics* 52 (Feb. 1938): 255-80. For a more recent review of the concept, see Kenneth H. Mathews, Jr., et al., *U.S. Beef Industry: Cattle Cycles, Price Spreads, and Packer Concentration* (Washington: USDA, Economic Research Service, 1999).

cycle has been a permanent feature of beef production throughout the twentieth century.

Successful Farming, noting the regularity of the phenomenon up to 1975, advised its readers to "buy a 10-year calendar."⁷³ Regulating such lengthy price cycles would require a degree of foreknowledge beyond the capacity of most government bureaucrats; and in any case, political cycles tend to be several years shorter than cattle cycles.

Henry A. Wallace's Department of Agriculture was thus under pressure to help livestock raisers, but not through price supports, production controls, or marketing agreements. The Beef Trust's power to control cattle prices became the logical target for state action. In particular, the USDA focused its efforts on the public stockyards or terminal markets where cattlemen continued to complain of unfair trade practices by the big packers. Using the authority granted by the Packers and Stockyards Act of 1921, Wallace took a somewhat indirect, though ultimately effective, route to limit the monopsony power of the packers in the buying of cattle. This was done primarily by encouraging decentralization, made possible by trucks, of the cattle marketing infrastructure.

Farmers first began significant use of trucks to haul livestock to markets in the 1920s. Farmers began loading up their own or their neighbors' animals on pickup trucks, often Ford Model Ts, and driving them to the nearest public market. Rarely traveling more than 50 miles in those days of relatively inadequate country roads, farmers fortunate enough to be located close to a market such as Chicago, St. Paul, or St. Louis could often gain significant savings by avoiding rail shipping costs and by taking animals to market only on days when prices were high. Using trucks, farmers could counteract the monopsony power of cattle buyers by simply refusing to sell until the price was right.⁷⁴ At first, many terminal stockyards proved resistant to trucked-in livestock. Because yards often had tight financial relationships with railroad

⁷³ The magazine described the first half of the cycle thus: "Characteristics are high cattle prices, glittering outlook reports, optimistic speeches, stories about meat shortages, high pasture rent and an upswing in sales of cowboy boots." The second half of the cycle was characterized by "bankers who wouldn't be caught dead in cowboy boots." Lee Searle, "Cattle Marketing: Cycles Still Control the Booms and Busts," *Successful Farming*, Aug. 1975, 22-3.

⁷⁴ R. C. Ashby, *Livestock Truckage Rates in Illinois with a Comparison of Marketing Expense by Truck and by Rail*, Bulletin 342 (Urbana: Illinois Agricultural Experiment Station, 1930); E. C. Johnson and E. A. Johnson, *Trucking Livestock to South St. Paul*, Bulletin 278 (St. Paul: Minnesota Agricultural Experiment Station, 1931); G. F. Henning, *The Truck and Its Relationship to Livestock Marketing in Ohio*, Bulletin 440 (Wooster: Ohio Agricultural Experiment Station, 1929).

companies as well as significant investments in railheads and unloading platforms, they charged sellers of trucked-in livestock higher yardage and commission fees.⁷⁵

In 1935 Secretary of Agriculture Wallace, realizing the potential power of trucking to shift the balance of power in cattle marketing, initiated a number of efforts under the Packers and Stockyards Act to equalize railroad and trucking rates. The Union Stock Yard at Chicago was the primary target. When Chicago petitioned the Secretary to be allowed to raise its fees from 40 cents to 50 cents per head of cattle trucked in, Wallace denied the application, noting that it would place "an undue burden on the shippers of livestock arriving by truck."⁷⁶ After denying the petition, Wallace drove the point home by ordering an investigation of the reasonableness of trucking rates at Chicago.⁷⁷ Chicago quickly learned its lesson, as stockyards deeper in cattle supply areas—especially Omaha, St. Joseph, and Kansas City—began building improved truck unloading facilities in the mid-1930s to try to attract livestock producers to their facilities.⁷⁸ In 1936, trucks hauled 55 percent of cattle shipped to public stock yards.⁷⁹ The proportion of cattle moving to public stockyards via truck rather than rail steadily increased over the next few decades. In 1939 three of every five cattle arrived by truck; in 1949, nearly three-quarters did so, and by 1960, nine of ten cattle came to public stockyards in truck trailers.⁸⁰

A more fundamental shift in cattle marketing power relations came with the advent of "direct" or "country" buying in the 1930s. Rather than ship livestock all the way to urban stockyards to be sold by a commission merchant, farmers found that they could reduce shipping costs and yardage fees by simply selling their stock at smaller yards or concentration points in the countryside. Packer buyers came to these yards to buy directly from the farmers rather than through city commission merchants. The packers would consequently be responsible, rather than the farmers, for most of the costs of shipping the cattle to slaughtering plants. Since the shipping of the animal to the plant was generally done via rail, these concentration points were

⁷⁵ Ashby, *Livestock Truckage Rates in Illinois*, 148.

⁷⁶ J. R. Mohler to Henry A. Wallace, Sep. 17, 1935, RG 16, Entry 17, Box 2209, Folder 6.

⁷⁷ M. L. Wilson (Acting Secretary of Agriculture) to Hugh M. Tate (Chairman, Interstate Commerce Commission), Oct. 8, 1935, RG 16, Entry 17, Box 2209, Folder 6.

⁷⁸ "Record in Cattle," *Kansas City Times*, Oct. 19, 1943, Cattle Industry Clippings, Kansas State Historical Society, Topeka, KS.

⁷⁹ Schlebecker, *Cattle Raising*, 167.

⁸⁰ American Trucking Associations, *American Trucking Trends* (Washington: American Trucking Associations, 1954), 7; *ibid* (1963), 22.

usually built by railroads close to highways to encourage farmers to truck their animals to country railheads.⁸¹ For instance, the Southern Railroad built an auction yard in Knoxville, Tennessee in 1928, where farmers trucked in cattle from within a 75- to 100-mile radius and sold them directly to Swift and Armour buyers for their slaughtering plants in neighboring states.⁸² The Illinois Central Railroad initiated a similar plan in 1934, hoping to recapture livestock shipments from truckers by providing twenty-two country buying stations on their lines west of Chicago; the railroad even paid truckers to travel to farms within a ten mile radius of each station to collect livestock.⁸³ The Santa Fe likewise built country buying stations in the southern plains of Texas, Oklahoma, and New Mexico in the 1930s.⁸⁴ At first, direct buying posed only a relatively small threat to the business of the big urban yards. In 1933, only about 17 percent of cattle were direct marketed. By 1939, about a quarter of cattle were sold outside the central terminal markets.⁸⁵

As early as 1934, however, stockyard managers foresaw the potential for direct buying to render their urban facilities obsolete. The American Stock Yards Association, which represented the 50 largest central markets in the country, consequently proposed to Secretary Wallace that a code of fair competition be drawn up under the auspices of the National Recovery Administration to prevent packers from buying livestock outside the traditional marketing channels. Claiming that direct buying "seriously depresses the price of livestock," the stockyards argued that a code of fair competition was necessary to prevent packers from taking advantage of farmers who did not have the help of an experienced commission agent to negotiate higher prices. The stockyards received some backing from livestock organizations in this effort; the president of the Kansas Farmers' Union testified before Secretary Wallace that "the universal sentiment in Kansas is against the direct marketing evil."⁸⁶ But if such sentiment was universal

⁸¹ George L. Schein (Counsel for a Group of Interior Packers), "Index and Abstract of Transcript of Hearing on Proposed Code of Fair Competition Submitted by the American Stockyards Association to the Agricultural Adjustment Administration and the National Recovery Administration for Approval," Mar. 2, 3, 5, 6, 1934, RG 16, Entry 17, Box 2076, Folder 4, pp. 5-8.

⁸² Notes on Knoxville, Tenn. Union Livestock Yards, Mar. 1959, RG 136, Transportation and Facilities Research Division, Project Files and Research Studies, 1947-1963, Entry 43, National Archives II, College Park, MD, Box 4.

⁸³ "Livestock Lure," *Business Week* (hereafter *BW*), Dec. 1, 1934, 21.

⁸⁴ Joe Rose and A. L. Rose, "Trucking in New Mexico in the Late 1940s," *Wheels of Time*, Mar. 2004, 30-1.

⁸⁵ Schein, "Hearing on Proposed Code of Fair Competition," 7; USDA, Agricultural Marketing Service, Livestock Division, *Livestock, Meat, Wool, Market News: Weekly Summary and Statistics*, Jan. 31, 1940, 1148.

⁸⁶ Schein, "Hearing on Proposed Code of Fair Competition," 14.

in Kansas, most of the producers who testified at the hearings thought otherwise. A livestock feeder from northwest Iowa swore that "when the packer came along to purchase livestock from the farmer for cash it was to the farmer's great advantage." No longer did the farmer have to pay shipping costs or extortionate yardage fees, and he was furthermore guaranteed an instant cash payment.⁸⁷ A cattle feeder from eastern Iowa agreed, calling the urban stockyard companies "autocratic and dictatorial" and blaming the Chicago Union Stock Yard in particular for "greatly overcharging in feeding charges."⁸⁸ In combination with vociferous objections from railroad managers and packing company representatives, producers' protests led the Secretary of Agriculture to offer no support to the proposed NRA code, and it was never enacted.⁸⁹

Over time Secretary Wallace and his advisors became increasingly convinced that direct buying offered a politically painless solution to the problem of monopsony. When stockyards first began complaining to Wallace of the "direct marketing evil" in 1933, Wallace ordered a preliminary investigation by the Packers and Stockyards Division. Finding no evidence of unfair practices by packers in direct buying, the economists at the division were nonetheless ambivalent at first as to whether the long-term effect would be beneficial or harmful to producers.⁹⁰ Following the NRA code hearings, the Packers and Stockyards Division made a more thorough investigation, once again finding no evidence of collusive behavior on the part of direct packer buyers.⁹¹ Livestock producers, meanwhile, increasingly adopted the new sales method through the 1930s, prompting agricultural economist Albert G. Black (a former student of John D. Black) to state in 1938 that "a movement such as direct marketing must have tremendous popular appeal to livestock producers and to livestock processors, otherwise it would hardly have grown as rapidly as it has."⁹² The rise of hundreds of country buying stations and local auction markets led to an increasingly decentralized marketing structure, allowing a

⁸⁷ Ibid., 74-5.

⁸⁸ Ibid., 79.

⁸⁹ Ibid., passim; J. D. LeCron (Assistant to the Secretary of Agriculture) to J. E. Renner (Renner Livestock Commission Company), Dec. 18, 1934, RG 16, Entry 17, Box 2076, Folder 4.

⁹⁰ Rexford Tugwell to C. F. Schwab (Manager, Farmers Union Livestock Commission), Jul. 19, 1933, RG 16, Entry 17, Box 1848, Folder 4.

⁹¹ M. L. Wilson to C. A. Lyndon (Alberta Agriculture Department), Feb. 1, 1939, RG 16, Entry 17, Box 3048D, Folder 11.

⁹² A. G. Black to N. K. Carnes (General Manager, Central Co-Operative Association), Dec. 28, 1938, RG 16, Entry 17, Box 2821, Folder 13.

farmer to load cattle on a truck trailer and sell his stock at a place and time of his choosing. This produced a new economic geography in which, although the number of firms buying slaughter cattle still remained relatively small, the number of possible points of sale had multiplied dramatically, thereby decreasing the ability of buyers to collusively set prices.⁹³

The power of trucking to reconfigure cattle marketing in favor of producers was almost certainly not due to lower costs or simple economic efficiency. As late as 1947, when decent highways began making trucking generally more cost effective than in the 1930s, the Kansas Agricultural Experiment Station reported that trucking livestock cost from 12 to 14 cents more per hundred pounds than shipping by railroad at distances of 150 to 250 miles.⁹⁴ The efficiency of highway livestock transport was further hindered by the difficulty cattle truckers experienced finding suitable loads for the return trip, or "backhaul," home. This became most evident during World War II, when the Office of Defense Transportation required all truckers to carry a minimum of 75 percent of loaded capacity on all backhauls in order to conserve rubber and fuel. Unfortunately, cattle trailers proved difficult to load for backhauls. An Indiana livestock trader asked his congressional representatives to consider exempting cattle haulers from the ODT requirement, since "live stock trucks being unroofed, and slatted, and filthy with dirt, are not suitable for many kinds of hauling jobs."⁹⁵ A livestock trucker might be able to return with coal, cattle feed, straw, or some other non-edible general freight, but would generally have to do so at rates that might not even pay for the fuel to get back, since every other livestock trucker heading back competed for the same loads.⁹⁶ The problem was compounded in sparsely populated cattle raising areas that sent out great volumes of animals but imported relatively little general freight.⁹⁷ By any standard measure of transportation efficiency, trucks could not compete with

⁹³ Wood, *Kansas Beef Industry*, 270. See also "Ray Lindberg Speaks at Annual Livestock Day," *Kansas Transporter* (Aug. 1961): 7.

⁹⁴ Clarence A. Moore, C. P. Wilson, and Harold M. Riley, *Marketing Feeder Cattle and Calves in Kansas*, Bulletin 361 (Manhattan, KS: Kansas Agricultural Experiment Station, 1953). See also Aly A. Abdou, "Economic Aspects of Motor Transportation in Marketing Livestock," *Journal of Farm Economics* 39 (Nov. 1957): 958-65.

⁹⁵ Indianapolis Live Stock Exchange to All Indiana Senators and Congressmen, Jun. 16, 1942, RG 16, Entry 17, Box 742, Folder 3. See also "Fear Truck Order," *Kansas City Times*, May 7, 1942, Motor Carrier Industry Clippings, Kansas State Historical Society, Topeka, KS (hereafter KSHS).

⁹⁶ Brian Surratt, "Behind the Wheel," *Wheels of Time*, Mar. 2004, 36.

⁹⁷ Keith Himebaugh to Clarence Kitchen, Jun. 17, 1942, RG 16, Entry 17, Box 742, Folder 3; Frank Witherspoon to Grover B. Hill, May 13, 1942, RG 16, Entry 17, Box 742, Folder 5.

the lower costs of railroads or their ability to subsidize empty backhaul cars with loaded box cars in the same train.⁹⁸

It was the convenience and flexibility of livestock trucking, not rational calculations of costs, that led farmers to increasingly abandon the rail-based terminal market system. Oscar Mayer, a leading independent meatpacker, argued at the 1934 NRA fair competition hearings that the shift to country buying was not only beneficial for farmers, but was an inescapable product of technological change, the "result of good roads, motor transportation and radio."⁹⁹ Though his determinism was perhaps a bit strong, Mayer was quite right to note the possibilities opened up by these three technologies. Radio allowed the farmers to maximize the power of trucking, because farmers would listen to early morning livestock market reports to decide whether they might be able to get a good price that day at the local auction or cattle buying station. As Ernest Kellenberger, a cattle feeder from Algona, Iowa, would recall 30 years later, it was very convenient to "turn my radio on early in the morning and back the old truck up to the chute and put the cattle on and take them [to market], if the [price] seem[ed] desirable."¹⁰⁰ Producers with access to trucks could exercise more freedom in choosing when and where to market their livestock. Most notably, farmers could haul their animals to either a country market or to an urban market, and if the price wasn't right that day, either take the cattle to another market with higher prices or simply take them home. This had been impossible in the days when railroads controlled cattle shipments according to their strict schedules, and big packers and their stockyard allies controlled the daily prices at all major markets via telegraph.¹⁰¹ By the beginning of World War II, trucking brought cattlemen a newfound power in the livestock marketplace. The Packers and Stockyards Division of the USDA had achieved part of its original mission without having to flex much state muscle.

⁹⁸ Of course, railroad stock cars were just as unadaptable as truck cattle trailers for alternate cargoes, but railroads could generally find at least some freight to send back West, while truckers most often had to drive back an entirely empty trailer. See White, *American Railroad Freight Car*, 247.

⁹⁹ Schein, "Hearing on Proposed Code of Fair Competition," 102.

¹⁰⁰ House Committee on Agriculture, *Prohibit Feeding of Livestock by Certain Packers, Hearings*, 89th Cong., 2d sess., Apr. 21, 22, Oct. 5, 6, 1966, 106.

¹⁰¹ Abdou, "Economic Aspects of Motor Transportation," 961; Wood, *Kansas Beef Industry*, 179.

The Price of Beef

The problem of packer monopoly in distribution was not so easily solved. While farmers received disastrously low prices for their cattle in the early 1930s, consumers found prices of fresh beef increasingly out of reach. The prices of sirloin steak and round steak increased 5 percent just in the month from June to July 1933.¹⁰² From August 1933 to August 1935, the average price of sirloin increased by more than a third, with round steak up 40 percent.¹⁰³ At a time when up to one-quarter of the workforce was unemployed, such price rises forced many families to buy less meat. In 1929 Americans consumed 85 pounds of red meat per capita, but in 1935 each person consumed only 77 pounds.¹⁰⁴ Purchasing less meat was one form of resistance to high prices, but in a nation where beef had been transformed from a luxury to a prerogative of the American way of life, many consumers sought more active political solutions.¹⁰⁵ In 1935, activists in cities like New York, Detroit, and Boston organized extensive meat boycotts. Picketing housewives shut down butcher shops, demanded lower prices, and above all called for thorough investigations of the Beef Trust.¹⁰⁶ The Women's Auxiliary of the United Auto Workers mounted further protests against beef prices in 1937-38 in a nationwide campaign known as "No Meat Weeks."¹⁰⁷ Livestock raisers generally sympathized with the consumers' outrage, since high retail prices reduced demand. An Iowa cattle feeder, bewildered by rock-bottom cattle prices at a time when consumers could not afford to buy beef, wrote Secretary of Agriculture Henry A. Wallace in 1933 to offer his take on the problem: "I do not blame any one but the packing industry."¹⁰⁸

Wallace's Department of Agriculture came under constant pressure in the 1930s to use the power bestowed by the Packers and Stockyards Act to deal with the Beef Trust's apparent control of retail meat pricing. The Packers and Stockyards Act (P&SA) of 1921 provided

¹⁰² "Retail Food Prices Rose 3.3% in Month to June 15, According to 51 Cities' Reports," *NYT*, Jul. 15, 1933, 15.

¹⁰³ "Big Food Price Rise Shown in Two Years," *NYT*, Sep. 13, 1935, 40.

¹⁰⁴ USDA Economic Research Service, "Food Consumption (Per Capita) Data System," accessed online at <<http://www.ers.usda.gov/data/foodconsumption/>>, Apr. 28, 2004.

¹⁰⁵ On the rise of beef as America's preferred meat, see Ross, "Patterns of Diet." Particularly interesting is Lawrence B. Glickman's analysis of the early twentieth-century labor movement's appropriation of beef as a symbol of white superiority over Asian workers. Lawrence B. Glickman, *A Living Wage: American Workers and the Making of Consumer Society* (Ithaca: Cornell University Press, 1997), 85-7.

¹⁰⁶ Jacobs, *Pocketbook Politics*, Chapter 3.

¹⁰⁷ Schlebecker, *Cattle Raising*, 153; "UAWA Women Plan Meat Strike," *NYT*, Nov. 6, 1937, 7.

¹⁰⁸ H. S. Fain to Henry A. Wallace, Oct. 27, 1933, RG 16, Entry 17, Box 1771, Folder 14.

sweeping antitrust powers to the Secretary of Agriculture, but had lain essentially dormant for a decade. The P&SA was administered by the Bureau of Animal Industry, which was in charge of gathering data on slaughter volumes and cattle prices from the packers and also performed federally mandated meat inspections. Both of these activities required a degree of friendly cooperation between the private firms and the USDA's agents that previous Secretaries of Agriculture, including Henry A. Wallace's own father, Henry C., were not willing to sacrifice.¹⁰⁹ Nonetheless, with both consumer and producer anger mounting over the monopoly power of the big meatpackers in direct defiance of the Justice Department's Consent Decree, the P&SA seemed to offer the only strong legal support for state intervention.

Ironically, the first approach of the New Deal USDA to the meatpacker monopoly problem was to consider relaxing antitrust efforts rather than strengthen them. With the milk marketing agreements as a model, agricultural policymakers gave significant thought to creating a legalized monopoly in beef marketing, providing the big packers with immunity from antitrust actions in exchange for a guarantee of higher prices to farmers and reduced prices for consumers. Economists believed this might be possible to achieve, since the big packers would have incentives to increase capital investments in their operations without fear of state intervention, thereby achieving greater economies of scale that would benefit farmers and consumers while still allowing a "reasonable profit" for the packers.¹¹⁰ Perhaps the most surprising advocate of this approach in 1933 was the liberal Jerome Frank, legal counsel for the AAA who was also active in crafting the milk marketing agreements. [See Chapter 2.] Writing to sympathetic agricultural economists Rexford Tugwell, Mordecai Ezekiel, and Frederic C. Howe, Frank recommended in June of 1933 that the whole concept of antitrust be reexamined. Rather than consider the profit structures of the big meatpackers, Frank suggested a more appropriate strategy was to "restrict our attention to precisely computable *savings* effected by [economies of scale] and require that some portion of these savings be given to the farmer and some to the

¹⁰⁹ "Expects Packers to Help," *op cit.*; Senate Committee on Agriculture, *Regulation of the Meat Industry*, Hearings, 85th Cong., 2nd sess., Apr. 17, 1958, 7, 10, 11.

¹¹⁰ Frederic C. Howe, Memorandum for Secretary of Agriculture Henry A. Wallace, "Working Arrangement with Meat Packing Companies," Jan. 24, 1934, RG 16, Entry 17, Box 1995, Folder 6.

consuming public."¹¹¹ For a year, the USDA actively courted the meatpackers' opinions on this approach through private negotiations led by Frank.

Perhaps unsurprisingly, the packers proved quite receptive to the idea. Frederick H. Prince, a major stockholder in the Armour company and the Chicago Union Stock Yard, argued that "the most complete monopoly power that could possibly be granted" was necessary to achieve the New Deal goals of "fair profit on manufacturing" while still maintaining high farm prices and low consumer costs.¹¹² Prince drafted a detailed proposal for this "most complete monopoly," to be known as the Union Purchasing and Distributing Company. This company was to be owned by the Big Four packers and would "do all of the purchasing for the packers, fix the price to be paid for all commodities purchased, and have complete control of all shipments.... The company is also to fix the prices to be charged for all products sold." According to Prince, retail prices of meat would plummet with the savings in transportation and distribution costs achieved by shared facilities.¹¹³

Prince's dream of a state-sanctioned mega-trust would never come to fruition. Henry Wallace's top economic advisor Mordecai Ezekiel was particularly horrified at the idea of providing "a blank check of tremendous magnitude signed by the Secretary [of Agriculture], made out to the packers, and payable by farmers and consumers." The proposed agreement, Ezekiel angrily wrote to Assistant Secretary of Agriculture Rexford Tugwell, would give the packers "unlimited monopoly power to fix prices" and would lead to a "national scandal" for the USDA.¹¹⁴ Livestock organizations privy to the terms of the proposed meatpacker agreement concurred; it appeared to the president of the Nebraska Live Stock Breeders and Feeders Association in 1933, for instance, that the USDA was "dominated and surrounded by men that are known to be closely allied and connected with the packing industry."¹¹⁵ In response to such

¹¹¹ Jerome Frank to Rexford Tugwell, Mordecai Ezekiel, Frederic Howe, et al., "In Re: Packers," Jun. 29, 1933, RG 16, Entry 17, Box 1826, Folder 5. Emphasis in original.

¹¹² Mordecai Ezekiel to Chester Davis, Jun. 11, 1934, RG 16, Entry 17, Box 1995, Folder 6.

¹¹³ Robert E. Sher (Chief Attorney, Legal Division), Memorandum to Mr. Pressman, "Plan Proposed by Mr. F. H. Prince for Organization of Union Purchasing and Distribution Company," Jan. 26, 1934, RG 16, Entry 17, Box 1995, Folder 6.

¹¹⁴ Mordecai Ezekiel to Rexford Tugwell, "Re: Packers' Agreement," Aug. 8, 1933, RG 16, Entry 17, Box 1826, Folder 5. See also Paul H. Appleby, Memorandum for Secretary of Agriculture Henry A. Wallace, "Packers' Agreement," Feb. 12, 1934, RG 16, Entry 17, Box 1995, Folder 6.

¹¹⁵ D. M. Hildebrand (President, Nebraska Live Stock Breeders and Feeders Association) to Franklin D. Roosevelt, Sep. 2, 1933, RG 16, Entry 17, Box 1826, Folder 6.

criticism, Jerome Frank redrafted the proposed agreement in August 1933 to authorize the Secretary of Agriculture to examine packers' books to insure that their profits remained reasonable, but the packers resisted what they called "fishing expeditions" into their company records.¹¹⁶ Gustavus Swift wrote Secretary Wallace in January 1934 to argue that his company made only "moderate profit," most of which went to the company's 55,000 stockholders—"a collection of small people." Reduction of those moderate packer profits, Swift asserted, would not only be unfair to the "small people" but would have only an insignificant impact on either farmers' prices or consumers' costs.¹¹⁷ By May 1934, it had become clear that the meatpackers and the USDA's liberal economists would never reconcile their ideas of what counted as reasonable monopoly power in terms of the public interest. The agreement was scrapped when the packers flatly refused to provide the Secretary with unlimited access to their books.¹¹⁸

Meanwhile, pressure mounted from consumer activists and livestock raisers for the USDA to confront the Beef Trust. The pressure was exacerbated in 1934 when the AAA's new programs to support farm incomes appeared to be partially at fault for rising food prices. Bad press became particularly painful for Secretary Wallace after he ordered reductions in hog numbers in late 1933 to restore pre-Depression farm prices; the so-called "slaughter of six million baby pigs," along with grain price supports and cotton acreage control programs, would haunt his Department for years afterwards. The implication that New Deal agricultural programs were promoting inflated food costs for urban workers at a time of crisis would not easily dissipate.¹¹⁹ In this context, Wallace felt compelled to defend the Packers and Stockyards Division as doing the best it could to keep a watchful eye on the pricing activities of the major meatpackers. Secretary Wallace received hundreds of letters from citizens demanding USDA investigations of the meatpackers through the 1930s. For instance, Massachusetts Governor Charles F. Hurley reported in 1937 that his state's Labor and Industries Department had found retail meat prices to be "exorbitant," and requested a formal investigation into the matter by the

¹¹⁶ Jerome N. Frank, "In Re: Marketing Agreement with Packers," Aug. 11, 1933, RG 16, Entry 17, Box 1826, Folder 5.

¹¹⁷ G. F. Swift (President, Swift & Company) to Henry A. Wallace, Jan. 11, 1934, RG 16, Entry 17, Box 1995, Folder 6.

¹¹⁸ Mordecai Ezekiel, Memorandum for Secretary of Agriculture Henry A. Wallace, "Status of Negotiations with Packers," Jan. 17, 1934, RG 16, Entry 17, Box 1995, Folder 6; Fred Krey (President, Krey Packing Company) to Rep. John J. Cochran, May 10, 1934, RG 16, Entry 17, Box 1995, Folder 6; Henry A. Wallace to R. C. Ashby, Jun. 27, 1936, RG 16, Entry 17, Box 2380, Folder 4.

¹¹⁹ See Chapter 1.

USDA.¹²⁰ Wallace replied that drought-induced feed shortages were the primary cause of high meat prices, and besides, the P&SA did not grant the USDA "authority or power to regulate or supervise the activities of retail meat dealers."¹²¹

The P&SA did, however, provide authority to order wholesale meatpackers to cease and desist from price-fixing and other collusive behaviors. In the spring of 1934, as the proposed meatpacker marketing agreement fell apart, Wallace initiated hearings to investigate eleven major packing firms for colluding to set retail prices and apportion sales of fresh meat to prevent sales competition across regional territories. In 1936 Wallace formally ordered the packers to end such practices; unfortunately, by the time the ruling came out, the packers had voluntarily stopped the illicit activities.¹²² Wallace was further humiliated in 1938 when Swift & Company retaliated by filing a lawsuit in federal court charging the Department of Agriculture with overstepping its authority under the P&SA.¹²³ Although this lawsuit went nowhere, it symbolized the uncertain status of the USDA as a trust-buster. Even when the Department had widespread political backing and an internal commitment to enforce antitrust provisions, its efforts were always one step behind the evasive packers. This left only the Federal Trade Commission and the Justice Department to cajole the packers into observing the antitrust provisions of the 1920 Consent Decree. Like the Department of Agriculture, these federal agencies found effective action difficult to achieve through the 1930s, even after the Supreme Court ordered the packers to comply fully with the terms of the original Consent Decree in 1932. Part of this failure was due to the fact that the Consent Decree allowed the packers to retain their fleets of refrigerated railcars and their branch houses, the two key elements allowing them to maintain monopoly power in meat marketing.¹²⁴

¹²⁰ Charles F. Hurley (Governor of Massachusetts) to Henry A. Wallace, Oct. 7, 1937, RG 16, Entry 17, Box 2589, Folder 2. Further examples of such letters fill thick envelopes in the Secretary's correspondence files.

¹²¹ Henry A. Wallace to Charles F. Hurley (Governor of Massachusetts), Oct. 23, 1937, RG 16, Entry 17, Box 2589, Folder 2.

¹²² "Packers' Letters Filed in Price Case," *NYT*, Sep. 17, 1935, 4; "Ten More Packers Accused," *NYT*, Nov. 10, 1935, 35; "Ban on Price Fixing Issued to Packers," *NYT*, Apr. 7, 1936, 19; "Swift Denies Agreements," *NYT*, Apr. 7, 1936, 19; "Packers Will Face Accusing Dealers," *NYT*, Oct. 6, 1936, 37.

¹²³ "Wallace Accused in Packer's Suit," *NYT*, Jul. 6, 1938, 5.

¹²⁴ Arnould, "Changing Patterns of Concentration," 26; Corey, *Meat and Man*, 90-1; Robert Aduddell and Louis Cain, "Public Policy toward 'The Greatest Trust in the World,'" *Business History Review* 55 (Summer 1981): 238.

Strong government involvement in the meat economy did not come until World War II, with the creation of the Office of Price Administration (OPA). Established to prevent runaway inflation like that experienced during World War I, the OPA proved surprisingly successful at keeping a lid on consumer prices of meat through World War II. While meat prices had risen by 60 percent during World War I, prices only rose about 30 percent under the watch of the OPA.¹²⁵ This was remarkable, since the armed forces purchased huge quantities of meat for soldiers even as good-paying wartime jobs allowed consumers to put meat back on the table; producers could barely keep up with the demand.¹²⁶ The OPA's achievement relied on a combination of extensive state action, instituted in the form of price controls and rationing, enforced by thousands of committed staff members and volunteers at the community level, "reaching down into the kitchens and closets of every home."¹²⁷ The OPA's efforts to hold the line on beef prices effectively quieted concerns over the Beef Trust during the war, as consumers enjoyed reasonable prices and livestock raisers experienced record profits. Furthermore, the activities of the OPA created a window of opportunity for independent meatpackers to make a dent in the Big Four's monopoly power in the beef industry.

The lessons of World War I led the OPA to freeze retail and wholesale food prices as part of the General Maximum Price Regulation of April 1942. Price controls on meat were further strengthened in December of the same year when beef prices were pegged at actual dollars-and-cents levels based on federally mandated grades, making it possible for consumers to check printed price lists to know whether they were being overcharged for a particular cut of meat.¹²⁸ Price controls gained their most significant support in March, 1943, when rationing was introduced, thereby limiting consumer demand for meat without the need for higher prices to discourage consumption.¹²⁹ Importantly, however, the prices of livestock were not so effectively controlled. Livestock raisers knew that wartime demand for meat offered an unprecedented opportunity to recoup losses incurred during the Depression. Powerful lobbyists from the Farm

¹²⁵ Corey, *Meat and Man*, 185.

¹²⁶ Marshall B. Clinard, *The Black Market: A Study of White Collar Crime* (New York: Rinehart, 1952), 124.

¹²⁷ Jacobs, *Pocketbook Politics*, Chapter 5; quote from Meg Jacobs, "'How About Some Meat?': The Office of Price Administration, Consumption Politics, and State Building from the Bottom Up, 1941-1946," *Journal of American History* 84 (Dec 1997): 918.

¹²⁸ "Peg Beef Prices," *BW*, Dec. 19, 1942, 70; Jacobs, *Pocketbook Politics*, Chapter 5.

¹²⁹ Clinard, *Black Market*, 116-7.

Bureau and livestock organizations descended on Congress during the deliberations establishing the OPA, successfully convincing Farm Bloc representatives to tie price ceilings for cattle to parity rather than fix them at a certain amount. Since the formula for parity fluctuated with the cost of living, the price of live cattle was essentially allowed to creep upward.¹³⁰ Combined with record-high numbers of cattle available for slaughter and low feed costs, it appeared to *Business Week* in May of 1942 that livestock producers would "be in the money up to their saddle horns" throughout the war.¹³¹ Certainly, livestock producers had little reason to complain about the Beef Trust under such conditions.

Lax control of cattle prices also provided a unique opportunity for independent meatpackers to compete directly with the Big Four. With the price of live cattle essentially uncontrolled, illicit entrepreneurs had a tremendous incentive to buy cattle at prices well above those offered by the major packers, then sell carcasses at above-ceiling prices to black market dealers. These "fly-by-night" operators developed a number of ingenious methods for avoiding price controls. For instance, each slaughterer was allowed by law to slaughter 50 cattle for his own personal use; quite often, these animals would make their way to retailers who would pay an artificially inflated price by "hiring" an employee of the slaughterer to receive the extra cash.¹³² Smaller meatpackers and wholesalers found it much easier than the Big Four to engage in such illicit practices, since only the largest packers were federally inspected by the USDA. Staff members of the OPA soon realized that such black market operations threatened the entire meat price control program, and demanded the USDA determine how many nonfederally inspected plants were in operation and begin tracking their production.¹³³ Although the USDA never did compile reliable data on non-federally inspected packers, later estimates put the volume of slaughter by such packers at one-half of wartime meat production.¹³⁴

¹³⁰ Jacobs, *Pocketbook Politics*, Chapter 5; Schlebecker, *Cattle Raising*, 171.

¹³¹ "Boom in Beef," *BW*, May 30, 1942, 22. On low feed costs, see Thomas J. Flavin to Fred Case, May 30, 1942, RG 16, Entry 17, Box 597, Folder 1.

¹³² Clinard, *Black Market*, 142, 134.

¹³³ John J. Madigan (Chief, Meat Branch of Food Rationing Division of OPA) to Jerry Thorne (Livestock and Meat Branch of Food Distribution Administration, USDA), May 12, 1943, RG 136, Subject-Numeric Correspondence Concerning Wartime Regulation of the Livestock Industry, 1943-44, Entry 111, National Archives II, Box 1, Folder 1.

¹³⁴ Clinard, *Black Market*, 143.

The Big Four packers chafed under the OPA, blaming price controls for allowing independent packers to make ill-gotten inroads into their business. In 1944 the big packers convinced the OPA that price controls without effective livestock price ceilings were putting them in a "squeeze" that would force them to cut back production, resulting in meat shortages.¹³⁵ In January of 1945, the OPA responded by instituting enforceable price ceilings on live cattle. Packers could now be charged with price violations for paying too much for their livestock. Packers were also given a direct subsidy which would be withheld if the OPA determined the packer was overpaying for cattle.¹³⁶ Even so, the ceilings on live cattle proved nearly impossible to enforce; small packers could earn far more from selling overpriced carcasses on the black market than they could by taking the government subsidy. OPA administrator Paul Porter realized in March 1946 that packers who complied with the cattle ceiling prices were finding it difficult to get a sufficient supply of animals, making them "extremely antagonistic" to the continuation of price regulations.¹³⁷ Ultimately, this antagonism would lead the meatpackers to organize a "strike," refusing to ship meat to stores in the summer and fall of 1946 until the OPA was killed.¹³⁸

Livestock raisers and their allies in the Congressional Farm Bloc and in the USDA aided the meatpackers in their efforts to break the OPA in 1946. The Farm Bureau mounted a strong campaign against the livestock price ceilings, arguing that only increased production could achieve lower consumer prices; livestock raisers would simply withhold their animals from market, the Farm Bureau argued, unless ceilings were lifted.¹³⁹ Secretary of Agriculture Clinton Anderson agreed with this logic, opposing price ceilings on live cattle from the very beginning of the war, and also refusing to help the OPA enforce the ceilings once they were instituted in 1945.¹⁴⁰ When Congress gave Anderson the power to raise live cattle ceilings independently of

¹³⁵ "Prices Assailed," *BW*, Jul. 15, 1944, 28, 31; "Beef in Trouble," *BW*, Dec. 23, 1944, 17-8; Clinard, *Black Market*, 145.

¹³⁶ "Ceiling on Beef," *BW*, Feb. 3, 1945, 24-6; Clinard, *Black Market*, 146-7.

¹³⁷ "Beef Is a Racket," *BW*, Mar. 30, 1946, 17; Paul A. Porter to Chester Bowles, Mar. 12, 1946, RG 16, Entry 17, Box 1340, Folder 1.

¹³⁸ Jacobs, *Pocketbook Politics*, Chapter 6.

¹³⁹ Edward A. O'Neal (President, American Farm Bureau Federation) to Clinton P. Anderson, Jan. 30, 1946, RG 16, Entry 17, Box 1340, Folder 1.

¹⁴⁰ Clinton P. Anderson to Rep. Paul J. Kilday, Mar. 13, 1946, RG 16, Entry 17, Box 1340, Folder 1; Jacobs, *Pocketbook Politics*, Chapter 5.

the OPA in the fall of 1946, he immediately did so.¹⁴¹ Unsatisfied with even this significant weakening of the OPA, cattlemen saw an opportunity to destroy all price controls by staging an unofficial "strike" in coordination with the meatpackers' efforts to create a meat shortage in October 1946.¹⁴² One Iowa cattle feeder wrote to Secretary Anderson that he had once been an "ardent supporter of OPA" but felt that it had lost "popular support," and thus had also lost his. He would keep his cattle on feed until all government interference in the cattle market was removed.¹⁴³ With both meatpackers and livestock raisers on "strike," the OPA was doomed as angry consumers demanded pot roasts, whatever the price. President Truman cancelled all price controls and rationing in mid-October, but was widely ridiculed for "bungling" the entire program.¹⁴⁴ The once-despised Beef Trust had successfully deflected consumers' anger away from itself and towards the government, although its independent competitors in cattle slaughter had gained market share along the way. Livestock raisers, meanwhile, had proven that the easing of monopsony in cattle marketing had given them enough market power to influence the politics of meat prices to an unprecedented extent.

But if the big packers had successfully courted consumer opinion at the end of the war, skyrocketing meat prices over the next few years would soon bring the Beef Trust back into disrepute. The packers' main argument against the OPA had been that price controls created an unfair "squeeze" situation which prevented them from producing enough meat to satisfy consumer demand at low prices. But for two years after the end of controls, meat prices skyrocketed.¹⁴⁵ In 1947 the Mayor of New York declared that "housewives in this city" saw prices rising from 6 to 16 cents per pound, a "shocking" development that belied the packers' promise of "plenty of meat at reasonable prices."¹⁴⁶ *Newsweek* found that retail meat prices rose ten percent from May to June 1947, leading to a "spirited game of find-the-culprit at all levels of the

¹⁴¹ J. B. Hasselman (Assistant to the Secretary of Agriculture) to Paul A. Porter, Aug. 24, 1946, RG 16, Entry 17, Box 1339, Folder 2; Charles F. Brannan to Rep. Mike Mansfield, Sep. 9, 1946, RG 16, Entry 17, Box 1339, Folder 3.

¹⁴² Schlebecker, *Cattle Raising*, 186.

¹⁴³ Nelson G. Kraschel to Clinton P. Anderson, Oct. 14, 1946, RG 16, Entry 17, Box 1339, Folder 5. See also Stanley Stauffer, "Beef Takes Short Cut Eastward off Ranges in Kansas," *Topeka (Kansas) State Journal*, Oct. 2, 1946, Cattle Industry Clippings, KSHS.

¹⁴⁴ Jacobs, *Pocketbook Politics*, Chapter 6; Allen J. Matusow, *Farm Policies and Politics in the Truman Years* (Cambridge, MA: Harvard University Press, 1967), 61.

¹⁴⁵ Corey, *Meat and Man*, 186.

¹⁴⁶ William O'Dwyer (Mayor of New York) to Clinton P. Anderson, Jun. 13, 1947, RG 16, Entry 17, Box 1471, Folder 12.

meat industry."¹⁴⁷ Consumer activists once again organized meat boycotts in 1947 and 1948, blaming the Beef Trust for taking unreasonable profits; some even called for a return to price controls to rein in spiraling prices of meat.¹⁴⁸ The Justice Department filed a new anti-trust suit against the Big Four packers in 1948, but the packers defended themselves by pointing to record-high consumer demand at a time of cattle shortages as the source of the problem.¹⁴⁹ Eventually the Justice Department dropped the suit in 1954, merely insisting that the packers follow the original Consent Decree.¹⁵⁰

With antitrust sentiment building up again from the late 1940s to the early 1950s, the Justice Department's failure to cope with the Beef Trust put increased pressure on the USDA to do something about packer control of the price of meat. This was something the Department proved reluctant to do directly by administering the antitrust provisions of the Packers and Stockyards Act. Instead, agricultural policymakers took an indirect route to reduce the marketing power of the big packers by redoubling efforts to increase the producing power of livestock raisers. Part of the reason for this indirect attack on the problem was due to the creation of the Livestock Advisory Committee under the Research and Marketing Act (RMA) of 1946. This committee was explicitly created by Congress to search for ways to reduce the cost of marketing meat products. From the beginning, however, the Committee was uninterested in any work by agricultural economists or engineers that might lower retail meat prices by reducing marketing costs, instead approving only those projects that increased cattle production capacities.¹⁵¹ This was because, unlike other committees under the RMA, the Livestock Advisory Committee was dominated almost solely by representatives of farmers, rather than packers, wholesalers, or retailers.¹⁵² Rather than work on issues of marketing, the Livestock Advisory Committee encouraged research into "production ... defined to include improvement in grass and forage for feed; breeding and genetics, with emphasis on the dissemination of methods of

¹⁴⁷ "Beefs about Beef," *Newsweek*, Jun. 23, 1947, 68-9.

¹⁴⁸ Skaggs, *Prime Cut*, 167; Jacobs, *Pocketbook Politics*, Chapter 6.

¹⁴⁹ Corey, *Meat and Man*, 91-2. The packers were justified in this claim; cattle numbers declined from 1947 to 1951 through the first half of a new ten-year cattle cycle, driving up stock prices which reached a peak in 1951 at \$29.69 per hundredweight. Skaggs, *Prime Cut*, 167.

¹⁵⁰ Skaggs, *Prime Cut*, 187-8.

¹⁵¹ N. E. Dodd to Sen. Warren G. Magnuson, Nov. 5, 1947, RG 16, Entry 17, Box 1441, Folder 8.

¹⁵² Donald K. Stokes to W. C. Crow et al., "Report on Livestock Advisory Committee Meeting," Feb. 27, 1950, RG 136, Entry 42 Box 2, Folder 2.

producing improved animals; disease and parasite control; and improved feeding and management practices."¹⁵³ The USDA's postwar productionist approach to the beef industry was also shaped by President Truman's appointment of Charles F. Brannan as his Secretary of Agriculture as part of an effort to prevent farm voters from deserting the Democratic Party.¹⁵⁴ As detailed in Chapter One, Brannan was a firm believer in raising beef cattle production to decrease the nation's grain surpluses, while also boosting meat supplies to allow lower consumer prices. The USDA focused on strengthening beef farmers' positions in the industry, rather than try to squelch the power of the big packers.

These efforts, when combined with the ongoing trend toward decentralization of cattle marketing noted above, brought the power of livestock producers to a peak by the beginning of the Korean War in 1950. At the onset of the war, the federal government once again established price control mechanisms under the Office of Price Stabilization (OPS) to dampen inflation, particularly of food prices. Although consumer organizations and liberal politicians supported renewed price controls, memories of the disastrous defeat of the OPA by meatpackers and cattlemen led Congress to insert a clause requiring a "reasonable margin of profit" for these producers under the OPS. Furthermore, the OPS set price ceilings without instituting rationing. Having seen the OPA go from a broadly supported to a broadly despised program due to artificial beef shortages, Congress wanted to control retail beef prices without having cattlemen derail the program by withholding animals, or by having consumers lose confidence because they could not buy a roast without resorting to the black market.¹⁵⁵ In January 1951, the OPS froze wholesale and retail meat prices, but once again made no effort to control livestock prices, hoping to provide incentives for cattlemen to keep packers supplied with a steady flow of animals. Cattle raisers and feeders responded by rushing animals to market at less than

¹⁵³ H. W. Marston to B. T. Shaw and P. E. Williams, "Report and Recommendations of the Livestock Advisory Committee," Apr. 4, 1952, RG 136, Entry 42, Box 2, Folder 2.

¹⁵⁴ Matusow, *Farm Policies and Politics*, 171-2.

¹⁵⁵ "'Scare Talk' Held a Meat Price Spur," *NYT*, Jan. 21, 1951, 41; "Swift President Assails Rationing," *NYT*, Jan. 19, 1951, 42; "Beef May Be Cheaper, But How Much Will We Get?" *Saturday Evening Post*, Jun. 23, 1951, 10-2; "Beef Raisers Tie Supply to Pricing," *NYT*, Jun. 27, 1951, 23.

"finished" weights to cash in before livestock ceilings might be imposed.¹⁵⁶ The result was a temporary flood of beef that made rationing seem unnecessary.

Demand for beef continued to rise, however, fueled especially by Army purchases. Without livestock ceilings, the price of cattle rose to a record high of 152 percent of parity. Since wholesale and retail prices were controlled, packers and butchers once again found themselves in a "squeeze." Packers responded to the new squeeze by simultaneously trying to exploit loopholes in the regulations to allow them to raise consumer prices while also demanding relief on cattle prices from OPS director Michael V. DiSalle.¹⁵⁷ In April 1951 DiSalle responded by rolling back all live cattle prices by 10 percent, "in order to restore the meat situation to where it was at the time when everybody else [packers and retailers] was caught."¹⁵⁸ The American National Cattlemen's Association immediately objected, calling the rollback "rank discrimination" against livestock raisers and blaming it for causing a "psychological effect" among cattlemen, "the result of which will be to discourage production."¹⁵⁹ With the price of beef rapidly rising, President Truman faced pressure from consumers and liberal Democrats to make the OPS succeed in controlling meat prices, but he faced a House Agriculture Committee that refused to cooperate.¹⁶⁰ Headed by Representative Harold D. Cooley of North Carolina, the Agriculture Committee called hearings in May to scold DiSalle for the cattle rollbacks: "Most of us believe that the best thing for the meat industry, to prevent skyrocketing prices, would be a more abundant production."¹⁶¹ Representative W. R. Poage of Texas agreed, telling DiSalle that "no roll-back that you can establish is going to produce cattle."¹⁶² And in fact, cattle producers responded to the rollbacks by going on a new "undeclared strike," keeping their animals on grass

¹⁵⁶ House Committee on Agriculture, *Beef Ceiling Price Regulations: Hearings*, 82nd Cong., 1st sess., May 7, 16-19, 23-25, 1951, 8-9.

¹⁵⁷ Clayton Knowles, "Brannan Defends Beef Price Order," *NYT*, May 15, 1951, 14; Will Lissner, "Wholesale Meat Prices Jump Despite 'Rollback' at Retail," *NYT*, May 17, 1951, 1, 27.

¹⁵⁸ House Committee on Agriculture, *Beef Ceiling Price Regulations*, 12; "10% Price Rollback for Cattle Today Starts Beef Plan," *NYT*, May 21, 1951, 1, 35.

¹⁵⁹ House Committee on Agriculture, *Beef Ceiling Price Regulations*, 80, 78.

¹⁶⁰ Charles E Egan, "DiSalle, Backed by Truman, Says Meat Rollbacks Stand," *NYT*, Jun. 8, 1951, 1; "Truman Hints Beef Compromise after Warning by Congressmen," *NYT*, Jun. 9, 1951, 11.

¹⁶¹ House Committee on Agriculture, *Beef Ceiling Price Regulation*, 1.

¹⁶² House Committee on Agriculture, *Beef Ceiling Price Regulation*, 5. See also Clayton Knowles, "Future Price Cuts for Beef Opposed," *NYT*, May 24, 1951, 21.

pasture until prices rose again. Stock receipts at terminal stockyards dropped by as much as 25 percent.¹⁶³ Congress caved to the cattlemen's pressure, canceling cattle price rollbacks in June.¹⁶⁴

But despite the cattlemen's strike, no meat shortages resulted. As *Business Week* reported in November of 1951, "when it comes to beef on the hoof, we have more of it than we've ever had."¹⁶⁵ But the impressive supply of beef came at a price; the only beef cuts that did not become more expensive during 1951 were luxury cuts such as T-bones and porterhouse steaks.¹⁶⁶ Livestock raisers benefited handsomely from the lack of livestock price ceilings; for the year of 1951, cattlemen received an all-time high price of \$29.69 a hundredweight, or 146 percent of parity.¹⁶⁷ Consumer groups were not pleased with the actions of the cattlemen and their Congressional allies in weakening the beef price control program.¹⁶⁸ Nonetheless, consumer buying power reached record highs during the Korean War, so that even with higher livestock and retail meat prices, consumers continued to buy beef with only sporadic complaints about the cost.¹⁶⁹ Price controls once again increased the power of cattle raisers in the marketplace while deflecting consumer and government ire away from the big meatpackers, who could somewhat justifiably complain of being "squeezed" between uncontrolled supply costs and frozen selling prices.

Everything changed for the Beef Trust in 1953, when the price of cattle plummeted while retail beef prices skyrocketed.¹⁷⁰ The new Secretary of Agriculture in the Eisenhower administration, Ezra Taft Benson, suddenly came under pressure from both cattle raisers and consumers to uncover the cause. Benson received letters from citizens putting the onus of high meat prices directly on the Secretary: "Men who work for a living can't pay such prices.... What can you do between the cattle men and the Butchers? Get busy or get out."¹⁷¹ Benson responded by ordering economists in the Agricultural Marketing Service (AMS) to commence an investigation into the beef price spread. As the study progressed, both farmers and consumer

¹⁶³ "The Big Beef," *Time*, Jun. 18, 1951, 91.

¹⁶⁴ Clayton Knowles, "House Group Votes to Bar Future Rollbacks on Beef," *NYT*, Jun. 19, 1951, 1, 34.

¹⁶⁵ "Disalle's Lid Holding on Beef Prices," *BW*, Nov. 10, 1951, 24.

¹⁶⁶ "The Beef Price Control Program," *Consumer Reports*, Jul. 1951, 321-4.

¹⁶⁷ Schlebecker, *Cattle Raising on the Plains*, 205.

¹⁶⁸ "Women Protest Rollback Defeat," *NYT*, Jun. 20, 1951, 21.

¹⁶⁹ "Who's Getting All the Beef?" *U.S. News and World Report*, Oct. 5, 1951, 16.

¹⁷⁰ Schlebecker, *Cattle Raising on the Plains*, 205.

¹⁷¹ Bob Douthitt to Ezra Taft Benson, n.d. (Oct. 1953), RG 136, Entry 11, Box 28.

advocates encouraged the USDA to look into the Beef Trust as the likely source of the problem. As a Georgia cattle producer explained to Benson, "There is too much spread between the price paid for live cattle and the price of steak and roast in grocery stores. Somebody is getting a heck of a profit! Didn't Swift show a 12 million dollar gain in NET profits this year over last?"¹⁷² The Milwaukee Mayor's Committee on the Cost of Living informed Benson that the study would only succeed if it paid close attention to the "excessive profit margins" of packers.¹⁷³ The Brooklyn Tenant Welfare and Consumer Councils saw the high cost of meat as a case of "obvious price fixing" and demanded a "thorough investigation" of meatpackers.¹⁷⁴ But Secretary Benson refused to blame the high price of meat on packers' profits, which AMS economists assured him had not been obtained by "improper actions."¹⁷⁵ Instead the economists pointed to unprecedented consumer demand at a time when the cattle cycle was nearing the end of its expansion phase; an imbalance in supply and demand had widened the beef price spread.¹⁷⁶ Benson furthermore pointed to high wages and strong labor unions as the fundamental cause of increased consumer demand. In particular, he believed the 1955 successes of unionized meatpacking workers in gaining a \$50 million wage boost had pushed up the cost of processing meat while forcing cattlemen to "tak[e] lower prices for meat animals."¹⁷⁷ Consequently, although the Beef Trust was as unpopular as it had ever been, Benson's Department of Agriculture made no significant effort to enforce the antimonopoly provisions of the Packers and Stockyards Act.

¹⁷² A. L. Ellis to Ezra Taft Benson, Dec. 27, 1953, RG 136, Entry 11, Box 28. See also Frank Olah to Ezra Taft Benson, Dec. 11, 1953, *ibid.*; Allerton Cushman to the Bureau of Agricultural Economics [sic], Nov. 6, 1953, *ibid.*

¹⁷³ A. L. Tilton (City of Milwaukee Mayor's Commission on Cost of Living) to Ezra Taft Benson, Oct. 13, 1953, RG 136, Entry 11, Box 28.

¹⁷⁴ Laura Hall (Executive Secretary, Brooklyn Tenant, Welfare and Consumer Councils) to Dwight D. Eisenhower, Nov. 18, 1953, RG 136, Entry 11, Box 28.

¹⁷⁵ Earl Butz to Sen. Ed. C. Johnson, Sep. 3, 1954, RG 136, Entry 18, Box 2, Folder 4; D. B. DeLoach to A. L. Ellis, Jan. 4, 1954, RG 136, Entry 11, Box 28.

¹⁷⁶ D. B. DeLoach to John A. Logan, Mar. 5, 1954, RG 136, Entry 11, Box 28.

¹⁷⁷ "Who Gets What You Spend for Food? Farmer's Share Shrinks, Labor Takes a Bigger Slice," *U.S. News and World Report*, Mar. 9, 1956, 72-3. The USDA's Agricultural Marketing Service would continue to argue that retail wages contributed significantly to the price spread between cattleman and consumer. Imogene Bright, *The Wage Factor in Retailing Meat in 4 Cities: A Study of Marketing of Agricultural Products* (Washington: USDA, Agricultural Marketing Service, 1957), 20-1.

Rural Meatpacking

This period of finger-pointing over the problem of monopoly in beef marketing lasted only briefly. Trucking and improved highways allowed a new breed of meatpackers to arise in the 1950s, markedly reducing the Big Four's monopoly position in beef marketing. Most important, reliable mechanically refrigerated truck trailers made it possible for independent meatpackers to erect a new form of marketing machinery, bypassing the integrated rail-based system that had allowed the big packers to maintain their monopoly power since the beginning of the dressed beef trade. This new marketing machine not only led to a remarkable decentralization of meatpacking, but also helped lower beef costs. As a consequence, agricultural policymakers at the USDA would be sheltered for several decades from political pressure to take on the Beef Trust; in effect, the Beef Trust disappeared. Although some agricultural economists saw the new marketing machine as less efficient than that of the Big Four, its flexibility created the conditions for a politically uncontroversial form of beef marketing. This led the USDA's policymakers and engineers to help smooth the system's operations.

Mechanically refrigerated trailers, or "reefers," made it possible for independent packers to completely bypass the Big Four's rail-based distribution system. Refrigerated trailers for motor transportation first became available in the 1920s, when both small and large meatpackers began using them to ship meat in areas lacking significant branch house facilities, primarily the southern plains. In 1925, for instance, the Merchants Fast Motor Lines in Fort Worth, Texas, hauled 8 million pounds of fresh meat from Swift and Armour plants directly to wholesale butchers.¹⁷⁸ Luper Transportation Company of Wichita, Kansas, began hauling reefer loads of fresh meat in the 1930s for independent meatpackers in that city who wanted the ability to deliver directly to butchers in smaller towns and cities in Oklahoma, Texas, New Mexico, and Arkansas.¹⁷⁹ But despite the advantages of direct shipping via reefer trucks in the 1920s and

¹⁷⁸ "Motor Trucks, Meat and Refrigeration," *Mack Bulldog* 4:8 (1925): 9, Warshaw Collection of Business Americana, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Automobile Industry Subject File, Box 8, Folder 5.

¹⁷⁹ "Fresh Meat on the Dinner Table a New Delicacy since Truck Transportation," *Kansas Transporter* (Nov. 1950): 14-5.

1930s, the technology of mechanical refrigeration for truck transportation remained unreliable until after World War II.¹⁸⁰

Once reliable reefer units came into widespread use in the postwar period, it became possible for meatpackers to ship fresh beef carcasses directly to a new breed of wholesalers on a large scale. The distribution of beef increasingly relied on independent firms called "breakers," "boners," and "peddlers," rather than packer-owned branch houses. Although each of these types of firms performed slightly different functions, all of them bought meat carcasses in small lots from any number of packers and transformed them into smaller cuts that could be used by institutional buyers—restaurants, schools, hospitals, and supermarkets—who wanted specific cuts in quantity, rather than entire carcasses.¹⁸¹ Independent wholesalers increasingly replaced branch houses from the late 1930s through the early 1950s. As the number of meatpacker branch houses declined by 43 percent between 1929 and 1954, the number of independent wholesalers almost doubled.¹⁸² Importantly, this allowed small meatpackers who did not own branch houses to effectively compete with the Big Four in interstate trade without having to invest in expensive capital equipment.¹⁸³ The need to purchase expensive distribution facilities was further reduced by the cooperation of trucking firms in providing reefers to move the carcasses from plants to wholesalers. Unlike the railroads of the late 19th century who had refused to provide refrigerated railcars for dressed beef packers, truckers in the postwar period readily purchased the necessary equipment. In 1946, over 66,000 mechanically refrigerated truck trailers were in use by the meatpacking industry. As many as one-third of these were

¹⁸⁰ See Chapter 4.

¹⁸¹ Willard F. Williams, "Structural Changes in the Meat Wholesaling Industry," *Journal of Farm Economics* 40 (May 1958): 325-7; "Who Gets the Money for Beef," *U.S. News and World Report*, Feb. 17, 1956, 36-40. "Breakers" focused on turning whole carcasses into primal cuts—i.e., wholesale cuts of meat that required some further trimming and cutting by retail butchers before being ready for the plate. "Boners" also worked with whole carcasses, but focused on removing bones and sinew from poorer quality carcasses that most often ended up as hamburger. "Peddlers," also known as "jobbers" or "purveyors," distributed primal and sub-primal cuts to restaurants and other high-volume buyers.

¹⁸² Williams, "Structural Changes," 322-3; Dale E. Butz and George L. Baker, Jr., *The Changing Structure of the Meat Economy* (Cambridge, MA: Harvard Business School, 1960), 51-2.

¹⁸³ Arnould, "Changing Patterns," 26.

owned by firms other than the packers.¹⁸⁴ Reefer fleets rapidly expanded over the next two decades; by 1963, trucks hauled 60% of the nation's refrigerated meat.¹⁸⁵

Direct shipping without the need for branch houses made it possible in the 1950s for small independent packers to locate plants nearer to rural cattle-producing regions. This new breed of packers built single-story plants, derided by the big Chicago packers as "cinder-blocks," in smaller cities and towns of the rural Midwest, West, and South (see **Map 3.4**).¹⁸⁶ One of the goals of locating deeper in the countryside was to prevent shrinkage of livestock during shipping; if a beef steer had less distance to travel on the way to slaughter, it would lose less muscle and water weight, meaning that, on an equal sized carcass, packers near cattle supply areas could gain greater profits than those further away.¹⁸⁷ Thousands of firms adopted this relocation strategy in the late 1940s and 1950s, with one of the most successful companies being Hygrade Food Products, which built or acquired slaughtering plants in the 1940s and 1950s in places like Vernon, Texas; Storm Lake, Iowa; Omaha, Nebraska; Mishawaka, Indiana; Orangeburg, South Carolina; and Hialeah, Florida. Many of the facilities that companies like Hygrade purchased were former plants of the "little slaughterers" who had grown during the price control efforts of World War II and the Korean War.¹⁸⁸

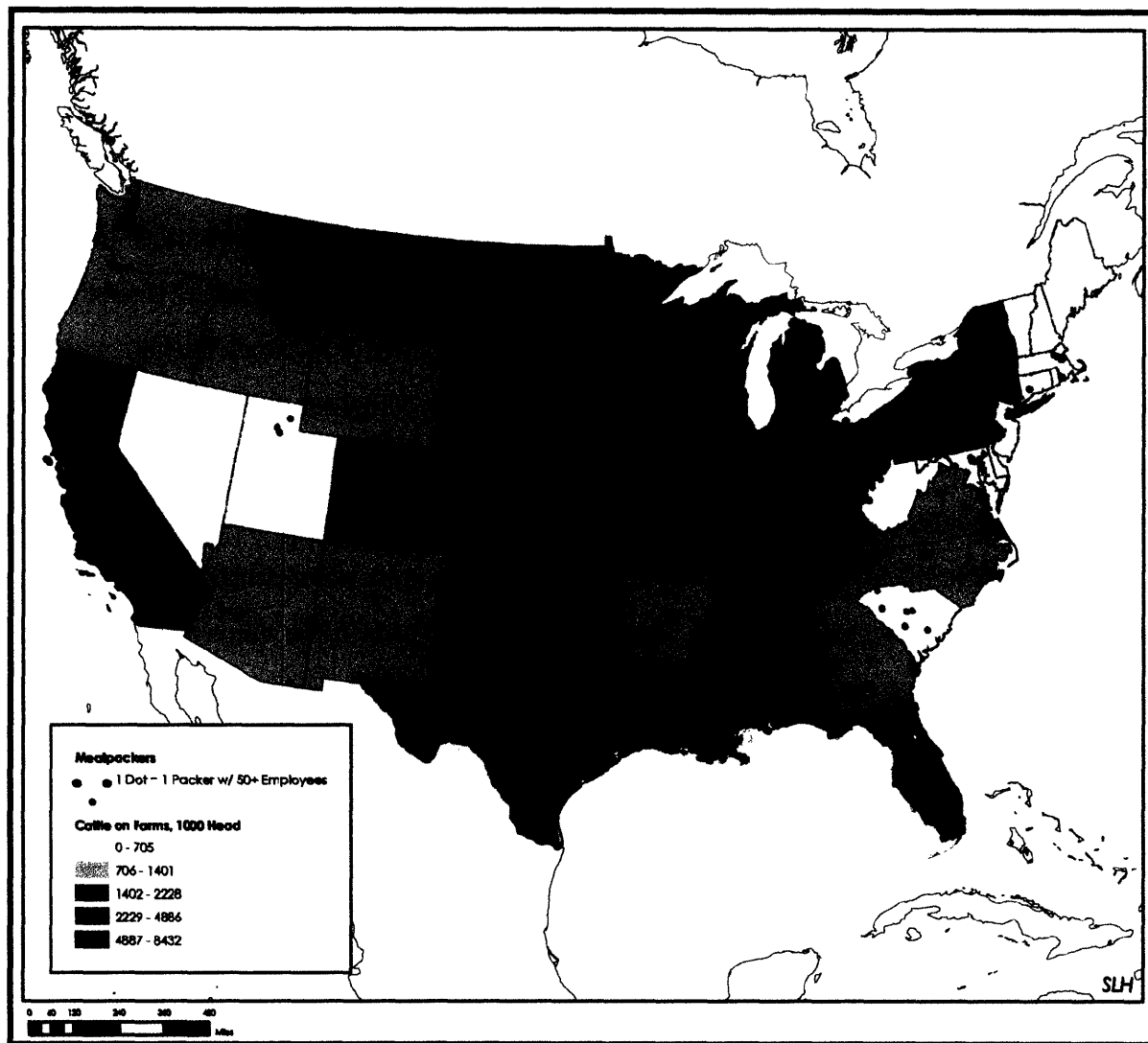
¹⁸⁴ Skaggs, *Prime Cut*, 153.

¹⁸⁵ Milton D. Ratner, "The Role of Truck Transportation in Marketing Pre-Packaged Meats," *Refrigerated Transporter* (Feb. 1969): 14-7.

¹⁸⁶ Butz and Baker, *Changing Structure*, 67.

¹⁸⁷ Page, "Agro-Industrialization," 178.

¹⁸⁸ Senate Committee on Judiciary, *Unfair Trade Practices in the Meat Industry: Hearings*, 85th Cong., 1st sess., May 1-3, 7-10, 15, 22, 1957, 280-1.



Map 3.4: Meatpacker Locations and Beef Cattle on Farms in 1959

Beefpacking decentralized both economically and geographically in the 1950s, as small "cinder-block" factories moved into rural cattle-feeding areas, particularly in the Midwest. Sources: Bureau of the Census, *County Business Patterns* 1959; USDA, National Agricultural Statistics Database.

Unlike the big packers, the cinder-block operators generally focused on slaughtering only one animal species, usually either cattle or sheep, leaving the processing of branded pork products to the majors. Species specialization allowed for construction of much less expensive slaughtering facilities, lowering the barriers to entry of firms with little capital.¹⁸⁹ Furthermore,

¹⁸⁹ Arnould, "Changing Patterns," 28.

slaughtering facilities, lowering the barriers to entry of firms with little capital.¹⁸⁹ Furthermore, the new packers found rural workers willing to work for much lower wages than the employees of the big urban packers, most of whom had been successfully organized by labor unions such as the CIO Packinghouse Workers Organizing Committee in the 1930s and 1940s.¹⁹⁰ A 1966 government study found that average hourly wages at rural single-plant firms were seventy-five cents lower than those of workers at multi-plant urban firms.¹⁹¹ All of these factors combined to make beef production both much more decentralized and far less expensive than it had ever been. In 1959, the USDA's Packers and Stockyards Division knew of at least 2,261 interstate meatpackers in operation, and there may have been even more.¹⁹²

The USDA's Agricultural Marketing Service provided two significant forms of assistance to small meatpackers to encourage the development of this decentralized beef marketing machine. First, the AMS promulgated official beef grading standards in 1939. These federal standards, which became compulsory during World War II and the Korean War to facilitate price control programs, categorized both live cattle and dressed beef. Cattle were graded based on their overall shape and on the quantity and distribution of fat (this was an era when a squat, fat beast was considered a good producer of tender beef). The lowest grades, destined to become hamburger or frankfurters, were Canner, Cutter, Inferior, Common, and Medium; the better cattle were classed as Good, Choice, and Fancy. Dressed beef was similarly classed, from low to high, as Canner, Cutter, Utility, Commercial, Good, Choice, and Prime.¹⁹³ Importantly, these federal grades allowed independent meatpackers, who unlike the Big Four did not have large sums of capital tied up in nationally advertised brand names and private grading systems, to sell meat as Good, Choice, or Prime. Consumers could buy unbranded beef with confidence; the

¹⁸⁹ Arnould, "Changing Patterns," 28.

¹⁹⁰ Horowitz, *Negro and White*, 1-141, 250-3.

¹⁹¹ National Commission on Food Marketing, *Organization and Competition in the Livestock and Meat Industry* (Washington: GPO, 1966), 17.

¹⁹² House Committee on Agriculture, *Equalize Livestock Marketing Competition: Hearings*, 87th Cong., 1st sess., Aug. 23, 24, 1961, 42. The 1958 *Census of Manufacturing* reported 2,801 firms engaged in commercial livestock slaughter; its inclusion of intrastate slaughterers explains some of the discrepancy, although it is also likely that some of the smallest packers never registered with the Packers and Stockyards Division.

¹⁹³ Elmer R. Kiehl and V. J. Rhodes, *Historical Development of Beef Quality and Grading Standards*, Research Bulletin 728 (Columbia: University of Missouri Agricultural Experiment Station, 1960). USDA beef grading standards were first published in 1926, but were not widely used until revised in 1939.

federal grades proved at least as trustworthy as those of the big packers.¹⁹⁴ In fact, the Big Four recognized that USDA meat grading gave significant aid to independent packers and demanded at the end of the Korean War that federal standards be made voluntary rather than compulsory.¹⁹⁵ But smaller packers continued to rely on the federal grades, which helped them improve their competitive positions in beef marketing. The amount of beef graded according the federal standards in 1955 totaled six billion pounds; five years later it was seven billion pounds, and by 1965 the total had reached over ten billion pounds.¹⁹⁶ In 1960 the Vice-President of the American Meat Institute—the Big Four's public relations organization—railed against the federal standards at an industry meeting, stating that "scientific research" had shown that only private brands helped to alleviate "insecurity on the part of housewives as they shop in retail meat stores."¹⁹⁷ Despite the big packers' hostility to federal grading, the standards remained popular with independent packers and consumers. Supermarkets and other institutional buyers also found that USDA grades helped them achieve uniform meat supplies without having to be tied to just a few packers.¹⁹⁸

The second major effort by the Agricultural Marketing Service to smooth the operations of the new beef marketing machine involved work on improving refrigerated truck transportation. Recognizing that the cinder-block packers relied almost solely on reliable reefers to market their products, Harold D. Johnson of the AMS headed a series of research projects in the mid-50s, in cooperation with the Truck Trailers Manufacturers Association, to develop design standards for improved meat reefers. Among other things, Johnson compared various forms of refrigeration, such as dry ice, to available mechanical refrigerators such as Thermo Kings to determine cost effectiveness. Perhaps more importantly, Johnson tested a variety of commercial reefers under varying temperature conditions and over different travel distances, finding that aluminum floor racks placed lengthwise—rather than crosswise wooden racks, the standard at the time—provided more efficient air circulation, thereby preventing shrinkage and

¹⁹⁴ Arnould, "Changing Patterns," 29.

¹⁹⁵ "End Forced Beef Grading," *Science News Letter*, Feb. 28, 1953, 134.

¹⁹⁶ G. C. Smith, et al., *An Evaluation of the USDA Beef Carcass Quality Grade Standards* (College Station: Texas Agricultural Experiment Station, 1980).

¹⁹⁷ George McKoy Lewis, "The Cattle and Beef Industry: Beef Grading and Related Problems," *Vital Speeches of the Day*, Jan. 1, 1961, 189, 190.

¹⁹⁸ Williams, "Structural Change," 327-9.

allowing packers to make greater profits without increasing retail prices. Significantly, Johnson's work was one of the only projects on improving beef marketing technologies to receive funding from the Livestock Advisory Committee under the 1946 Research and Marketing Act. Its importance for allowing cattle producers to receive higher prices from rural meatpackers without driving up the cost of retail beef was clear.¹⁹⁹ Johnson's work led truck trailer manufacturers to adopt his recommendations as standard practice by the late 1950s. Also in the late 1950s, the USDA's Agricultural Research Service supplemented Johnson's work by regularly inspecting truck reefer units at meatpacking plants to assure that they maintained low temperatures.²⁰⁰ This technical work, though relatively invisible to consumers or livestock producers concerned about the price of meat, played an important role in helping small rural meatpackers to compete on a more even level with the big meatpackers who had for so long controlled the technologies of fresh beef distribution. Defining aluminum as more efficient than wood was every bit as political as the antitrust work of the Packers and Stockyards Division, and probably more effective.

The Big Four meatpackers realized in the 1950s that the new beef marketing machine directly threatened their monopoly position, as their profits and market share greatly declined. In 1956, the Big Four slaughtered only 30 percent of the nation's cattle, down from 50 percent in 1920. This decline in slaughter came even while the nation's demand for beef increased, meaning that the Big Four became increasingly unable even to maintain their original share of business.²⁰¹ In 1955 *Business Week* reported on the dour state of the big packers, pointing out that none of them had earned a net return of more than one percent on sales after taxes in the previous three years; most American companies at the time counted on five or six percent to remain in business.²⁰² Desperate to regain market share, Swift tried using price-cutting to attract new retail customers in the late 1950s, but the USDA's Packers and Stockyards Division

¹⁹⁹ "Progress Report for Livestock Advisory Committee," n.d. (1954), RG 136, Entry 42, Box 2, Folder 2; Martin V. Gerrity and Harold D. Johnson, *Motortruck Transportation of Freshly Killed Beef* (Washington: USDA, Agricultural Marketing Service, 1956). Harold D. Johnson's work was even more important for the frozen food industry, so will be covered in more detail in Chapter 4.

²⁰⁰ "USDA Inspectors Protect Industry—As Well as Consumers," *Refrigerated Transporter* (Sep. 1964): 32.

²⁰¹ Senate Committee on Judiciary, *Unfair Trade Practices in the Meat Industry: Hearings*, 85th Cong., 1st sess., May 1-3, 7-10, 15, 22, 1957, 278; Robert Aduddell and Louis Cain, "The Consent Decree in the Meatpacking Industry, 1920-1956," *Business History Review* 55 (Autumn 1981): 367.

²⁰² "Bigger Margins, Fewer Gambles," *BW*, Jun. 11, 1955, 43.

quickly put a stop to these "unfair trade practices."²⁰³ Meanwhile, Swift petitioned a federal district court in 1956 to be allowed to violate the original Consent Decree by selling meat at the retail level. This effort also failed when Judge Julius Hoffman declared that although the Big Four had lost significant market share, they were still "huge" enough to warrant continued compliance with the Decree.²⁰⁴ But if Judge Hoffman believed that a monopoly still existed in meat marketing, the Big Four and the administrators of the Packers and Stockyards Act could not have disagreed more. The growth of trucking over the previous three decades had made it possible for smaller competitors to steadily erode the power of the big packers to control either the price of cattle in stockyards or the retail cost of beef. The Beef Trust had effectively dissolved as a material fact and as a matter of concern for cattlemen, consumers, or the USDA. Over the next several decades, however, trucking would ironically play a central role in developments that eventually led to a re-emergent monopoly in the beef industry.

The Re-Emergent Monopoly, 1960s-1980s

Almost as soon as highway-based beef distribution had allowed a dismantling of the monopoly first set in motion by Gustavus Swift's refrigerated railcar, new forms of economic concentration began to emerge in the 1960s. For a brief time, supermarkets appeared poised to dominate pricing policies in beef marketing, but by the end of the 1960s a new breed of rural meatpackers led by Iowa Beef Packers (IBP) established a dominance that was solidified by the early 1980s. Both of these developments depended on an increasingly industrialized system of raising beef cattle—the modern feedlot—that was made possible by long-haul trucking. Although the USDA had made significant technopolitical efforts to encourage the deconcentration of cattle marketing and meatpacking through the 1950s, agricultural policymakers of the late twentieth century made little effort to prevent the agro-industrial beef complex from becoming increasingly economically concentrated. IBP and the other new breed of meatpackers

²⁰³ "Two Complaints Filed against Swift & Co.," *NYT*, May 22, 1958, 49; "Swift Is Accused of Price Cutting," *NYT*, Mar. 31, 1959, 38.

²⁰⁴ Aduddell and Cain, "Consent Decree," 359-61, 369-72. Furthermore, Congress reacted to Swift's attempt to overturn the Consent Decree by initiating hearings to determine whether further laws needed to be passed to prevent the packers from entering the retail meat business. Senate Committee on Judiciary, *Unfair Trade Practices in the Meat Industry: Hearings*, 85th Cong., 1st sess., May 1-3, 7-10, 15, 22, 1957.

introduced technologies of production and distribution that so thoroughly revolutionized the beef industry that agricultural economists and policymakers saw efficiency where they might have otherwise seen monopoly. Although representatives of the USDA publicly acknowledged the existence of a new beef monopoly in the 1970s, they did not consider the issue to be a significant problem.

The Modern Feedlot

The first stage in the re-emergent beef monopoly was the transformation of the beef steer into an efficient meat producer in factory-style feedlots on the southern Plains in the mid-1950s. These modern beef factories, holding tens of thousands of cattle in confined pens, were inherently unlike the Corn Belt feedlots that had dominated beef cattle feeding since the late 19th century. Corn Belt feedlots rarely held more than 1,000 head at a time and were operated by farmers who used beef feeding primarily to supplement income from crop sales.²⁰⁵ The methods for beef feeding in the early twentieth century also relied on a complex relationship between ecological conditions and commodity markets that determined where and how a beef cow would spend its days before slaughter. For instance, the bluestem pastures of the Flint Hills of eastern Kansas provided succulent grazing for cattle who could either enjoy several unhurried years of grass feeding before slaughter, or be shipped off to spend their final months on the rich-soiled corn farms of Iowa or Nebraska to be "finished" at a higher weight with more impressive fat marbling.²⁰⁶ These ecological niches allowed cattle raisers to decide which fate would bring the most profit from a steer in any given year, depending on the relative price of grain feeds versus the price that could be had for a grass-fed steer.²⁰⁷ Cattle feeding up to the early 1960s was a highly unsystematic business, with relatively small and widely dispersed individual operators comprising the vast majority of feeders. The state of Kansas, which would become by

²⁰⁵ Skaggs, *Prime Cut*, 178. See also James Whitaker, *Feedlot Empire: Beef Cattle Feeding in Illinois and Iowa, 1840-1900* (Ames: Iowa State University Press, 1975).

²⁰⁶ "Cattlemen Must Neglect Feed Lot," *Topeka (Kansas) Capital*, Aug. 28, 1943, Cattle Industry Clippings, KSHS; John M. Collins, "The Cowman Holds the Top Cards in Year's Biggest 'Poker Game'," *Kansas City Star*, Aug. 27, 1944, Cattle Industry Clippings, KSHS; "More Beef to the Acre," *Kansas Farmer*, Feb. 1952, 6, 32.

²⁰⁷ "Flint Hills Feed Vast Lowing Herds," *Topeka (Kansas) Capital*, Jun. 13, 1944, Cattle Industry Clippings, KSHS; "Cattlemen Must Neglect Feed Lot," *Topeka (Kansas) Capital*, Aug. 28, 1943, *ibid.*; John M. Collins, "The Cowman Holds the Top Cards in Year's Biggest 'Poker Game'," *Kansas City Star*, Aug. 27, 1944, *ibid.*; "More Beef to the Acre," *Kansas Farmer*, Feb. 1952, 6, 32.

the 1980s the nation's leader in large-scale commercial cattle feeding, had less than two dozen commercial lots in the year 1960, with more than three-quarters of the state's fat cattle coming from individual farmers' feedlots or pastures. This situation would rapidly change. By 1965 nearly 60 percent of the state's cattle were fed in large commercial lots; in 1975 the number was nearly 90 percent.²⁰⁸ *Successful Farming* informed its readers in the late 1960s that "the Corn Belt is giving way to a new area—the Feedlot Belt," and recommended that Midwestern cattle feeders "get big (at least 500 head a year) and adopt a business approach" to compete with the large-scale commercial feeders of the Plains.²⁰⁹ Cattle feeding was becoming big business.

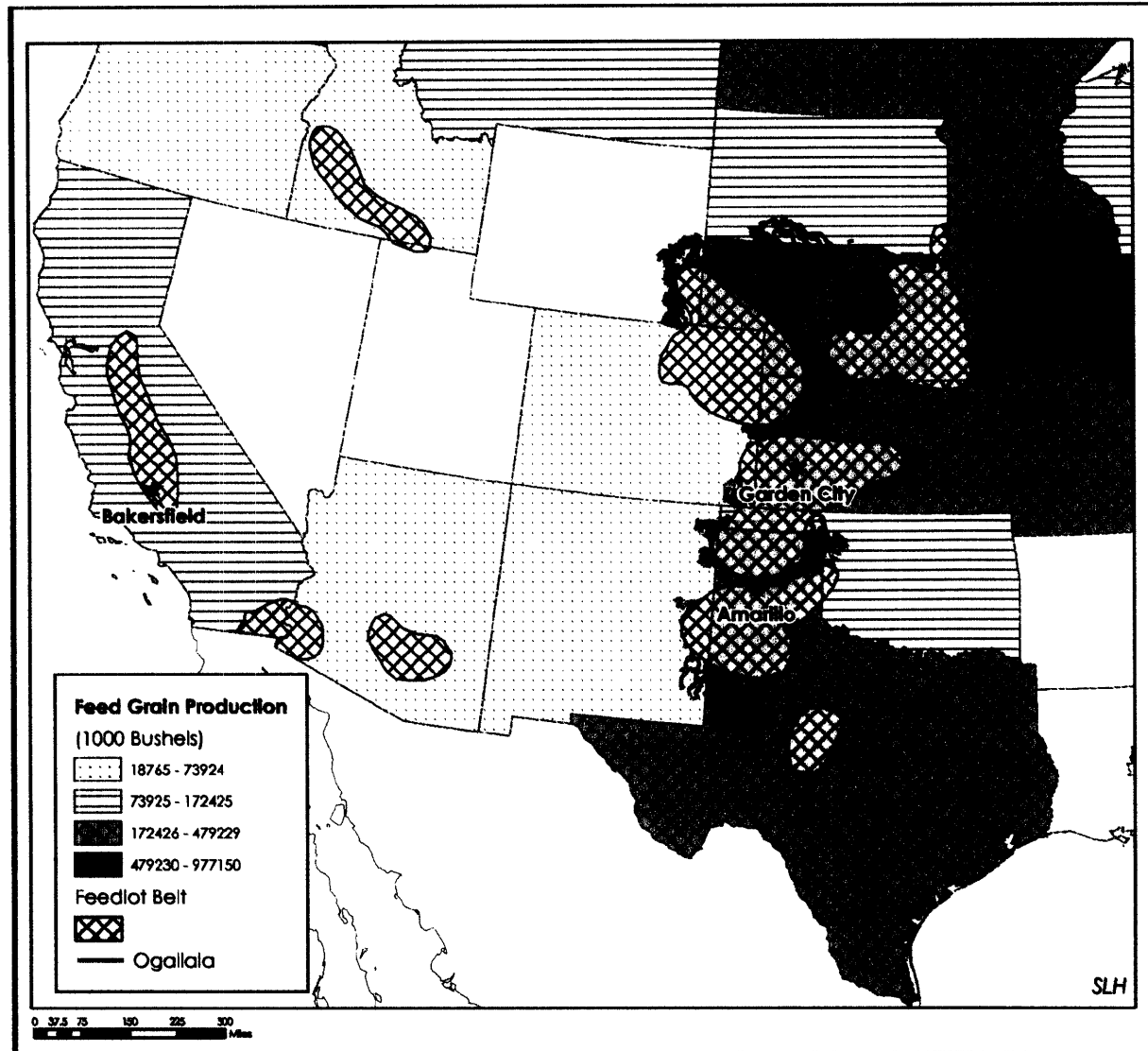
This growth was the result of an industrial approach to cattle feeding that appeared in the 1950s and became widespread by the mid-60s. Whereas Corn Belt feeders had treated beef cattle as supplemental income (and manure) producers, the modern commercial lots focused solely on getting cattle up to slaughter weight as quickly and efficiently as possible. Their only source of income came through "custom feeding," that is, charging cattle producers or investors a daily fee for yardage plus the cost of the feed required to "finish" the animals. Perhaps most important, the concept of industrial feeding was premised on abstract ideas of transportation economics rather than lived experiences of ecological niches in relation to seasonal grain market conditions. Grain could be transported in far more compact form than a live animal. Consequently, modern feedlot operators reconceived cattle feeding by moving the cow to the feed, rather than the feed to the cow, much as Henry Ford's assembly line had moved the product to the worker rather than vice versa.²¹⁰ Ideally, feedlot builders realized, the cow would not have to move very far to get to the feed. As a consequence, the modern feedlot system arose in the High Plains of Kansas, Texas, Oklahoma, Nebraska, and Colorado, in the middle of both the nation's great grain-producing region—the Breadbasket—and yet not far from the range

²⁰⁸ John H. McCoy and Robert H. Wuhrman, *Some Economic Aspects of Commercial Cattle Feeding in Kansas*, Bulletin 424 (Manhattan, KS: Kansas Agricultural Experiment Station, 1960), 6; Wood, *Kansas Beef Industry*, 286. Similar increases occurred in Colorado, Nebraska, Oklahoma, and Texas; see Kenneth R. Krause, *Cattle Feeding, 1962-89: Location and Feedlot Size* (Washington: USDA, Economic Research Service, 1991), 15.

²⁰⁹ Dave Malena, "Just Ahead—A Turning Point in the Beef Industry," *Successful Farming*, Apr. 1969, 32-3. See also Krause, *Cattle Feeding*, 4; Ray Morgan, "Bright Future in Flint Hills," *Kansas City Star*, Sep. 1, 1965, Cattle Industry Clippings, KSHS; Ray Morgan, "Key in Kansas Cattle Lots," *Kansas City Star*, May 17, 1966, *ibid.*

²¹⁰ On the assembly line, see David A. Hounshell, *From the American System to Mass Production, 1800-1932: The Development of Manufacturing Technology in the United States* (Baltimore: Johns Hopkins University Press, 1984), 217-61.

lands of the northern Plains and Texas where most beef cattle continued to be born and weaned.²¹¹ [See Map 3.5]



Map 3.5: The Feedlot Belt and Feed Grain Production in 1965

The giant cattle feedlots of the 1960s moved into the heart of feed grain production in the southern Plains atop the Ogallala aquifer, reducing transport costs. Source: Krause, *Cattle Feeding*, 9, 11.

²¹¹ Krause, *Cattle Feeding*, 4-9.

Many agricultural businessmen helped conceive and realize this industrial feeding approach, but one of the most important was Earl C. Brookover. As the man who brought the modern feedlot to southwestern Kansas—currently the nation's leading region of commercial cattle feeding—Brookover possessed a unique mix of farming experience, business acumen, and engineering skills. Born in 1906 in Scott County, Kansas, he worked as a young man for a neighbor who was one of the first to practice irrigated agriculture in that region of the state. Brookover became intrigued by the possibilities of irrigated agriculture, and traveled to Peru to drill wells and install water pumps on sugar cane plantations. This experience prompted him to return to Kansas to gain a degree in civil engineering—which he later recalled "was about as close as you could come to irrigation engineering at the time"—from Kansas State University in 1934.²¹²

Upon graduation, Brookover bought a potato farm in southwestern Kansas and began installing irrigation systems on his and his neighbors' farms. It was sometime in the 1940s that he happened to travel with a bachelor buddy out to California, where he witnessed the operation of a few pioneer commercial cattle feedlots near Bakersfield. Impressed by the scale of the Bakersfield operations, Brookover was less impressed by their location. Bakersfield was a long distance from both feed grain supplies and from the major cattle-producing ranges of the Plains, making transportation costs a serious drain on profits. Brookover realized that with the help of irrigation his home state of Kansas was poised to become one of the nation's largest producers of feed grains; if he were to establish a giant feedlot back in Kansas, he would have a convenient "home market" of cattle-customers who could turn all that grain into handsome profits. In 1951, Brookover convinced an old friend with deep pockets and faith in Earl's vision to fund the construction of the first commercial feedlot in Kansas, just outside Garden City. Brookover opened this first feedlot with just a few hundred "four-legged customers" driven by hoof from nearby farms, but within a decade the scale of operations had increased in steady increments of

²¹² Tom Carlin, "The Man with a Different Point of View," *K-Stater*, Jul. 1982, Feedlots Subject File, Finney County Historical Society, Garden City, KS (hereafter FCHS).

10,000 head every few years. As of 2004 the Brookover Feed Yards maintains three separate facilities with a total one-time capacity of 120,000 head.²¹³

Brookover rightly understood irrigation to be essential for cattle feeding on the southern Plains. The area of western Kansas that Brookover helped develop into a major producer of feed grain was also a place so arid that "oldtimers once believed nothing would grow but wheat and sagebrush."²¹⁴ But Brookover realized that the bone-dry soils of southwestern Kansas lay atop one of the largest aquifers in the United States. The mighty Ogallala, a subterranean formation of thick calcareous sands, gravels, and sandy clays, trapped waters that had run off from the formation of the Rocky Mountains in the Tertiary Period.²¹⁵ More than 800 miles long and 400 miles broad at its widest point, the Ogallala aquifer lay beneath parts of Texas, Oklahoma, New Mexico, Colorado, and Nebraska, as well as Kansas. [See Map 3.5] Although state and federal geologists had since the 1930s undertaken major hydrological explorations to determine the feasibility of using the Ogallala's waters, no large-scale tapping of the water resources began until the early 1950s, when center-pivot irrigation systems powered by natural gas made it possible to cheaply draw enormous quantities of water to the surface.²¹⁶ In just five years between 1962 and 1967, western Kansas farmers filed more than 3,200 applications to install irrigation systems on their lands, certain that they could "grow virtually anything" if they had the water.²¹⁷ Western Kansas was transformed in the 1950s and 1960s from a land of dry-farmed wheat fields to a patchwork of circular plots of green grain sorghums and roughage, such as hay, for cattle feed.²¹⁸ As Brookover had understood as early as 1951, it would be much less expensive to feed cattle in the heart of feed grain country, and he was proven correct in the mid-1960s

²¹³ Earl Brookover, Jr. and Ty Brookover, interview by the author, Mar. 23, 2004, Garden City, KS; Kathi Loper, "Earl Brookover's Achievements Far Ranging," *Garden City Telegram*, Oct. 8, 1976, Beefpacking Subject File, FCHS; "Farm Leader in State Dies," *Topeka (Kansas) Capital-Journal*, Nov. 14, 1985, Cattle Industry Clippings, KSHS; John Fraser Hart, *The Changing Scale of American Agriculture* (Charlottesville: University of Virginia Press, 2003), 48-55. The California feedlots that Brookover saw may have been those of the Kern County Land Company in Bakersfield, which were organized by Dwight Cochran, a former vice-president of marketing for Safeway Stores seeking to produce lean, grain-finished cattle in quantity for supermarket buyers (more below on supermarket preferences for grain-fed beef). See Skaggs, *Prime Cut*, 179.

²¹⁴ "State's Cattle Industry Is in 'Revolution'," *Topeka (Kansas) State Journal*, Aug. 16, 1967, Cattle Industry Clippings, KSHS.

²¹⁵ V. C. Fishel, "Ground-Water Resources of Kansas," *Transactions of the Kansas Academy of Science* 50 (Sep. 1947): 105-14.

²¹⁶ Larry Green, "Efforts Grow to Save 'Sixth Great Lake'," *Los Angeles Times*, Oct. 10, 1984, 1, 15.

²¹⁷ "Kansas Beef Boom in Feedlots," *Kansas City Star*, Aug. 20, 1967, Cattle Industry Clippings, KSHS.

²¹⁸ McCoy and Wuhrman, *Economic Aspects of Commercial Cattle Feeding*, 9.

when feedlot managers located above the Ogallala were able to buy feed grain for \$12 to \$15 more cheaply per ton than could California feedlots.²¹⁹

Much of this irrigated feed grain crop was hybrid grain sorghum, or milo. Sorghum had proven itself highly drought resistant on the southern Plains during the Dust Bowl of the 1930s, but was considered far inferior to corn as a cattle feed due to its lower protein content.²²⁰ The development of hybrid varieties of grain sorghum in the 1950s significantly changed cattlemen's views of the crop. After several decades of research at the Texas Agricultural Experiment Station, plant breeders developed a commercially viable hybrid milo seed in the mid-1950s; by 1959 nearly all plantings of milo were of hybrid varieties. Although still not as efficient as corn as a cattle feed, hybrid milo was so much cheaper to produce in the irrigated lands of the High Plains that it became a standard cattle feed. In 1944, High Plains farmers harvested 60 million bushels of grain sorghum, but two decades later the crop yielded 124 million bushels.²²¹

Irrigation and feed grains were central to Earl C. Brookover's original vision for the modern feedlot primarily because he thought of cattle feeding in engineering terms. The essential problem, as he understood it, was how to efficiently transform a set of inputs (feed grains) into a high-value product (beef), all the while keeping in mind environmental constraints and opportunities as well as the economics of transporting supplies and finished products. As his son has recalled, Earl Brookover believed "engineering was the basis for everything." Having grown to adulthood in the era of Henry Ford's greatest successes in mass production, Brookover sought to develop a complex of technology, science, and traditional farming skills that would allow the mass production of beef cattle.²²² And in fact, modern feedlots like the one Brookover

²¹⁹ "To Build Big Feed Lot Near Leoti," *Hutchinson (Kansas) News*, Aug. 11, 1966, Cattle Industry Clippings, KSHS; Charles Pratt, "Beefing up on a Kansas Runway," *Topeka (Kansas) Capital-Journal*, Feb. 18, 1968, *ibid.* Ironically, although feed grains needed a great deal of water to grow successfully, cattle feedlots benefited from the aridity of the southwestern Plains, since cattle could be kept in the open, reducing the need for expensive confinement barns. See Dave Malena and Richard Krumme, "Beef Confinement: The Controversy," *Successful Farming*, May 1970, 41-5.

²²⁰ Schlebecker, *Cattle Raising*, 163-4.

²²¹ J. Roy Quinby, "Hybrid Sorghum: A Triumph of Research," in *Southwestern Agriculture*, ed. Henry C. Dethloff and Irvin M. May, Jr. (College Station: Texas A & M University Press, 1982), 93-105; Garry L. Nall, "The Cattle-Feeding Industry on the Texas High Plains," *ibid.*, 107. Unlike corn, which was commercially hybridized by the 1920s, sorghum has both male and female reproductive organs on the same spikelet, making cross-pollination a difficult task that was only achieved when the Texas agronomists induced male sterility into a strain of the plant. On hybrid corn, see Deborah K. Fitzgerald, *The Business of Breeding: Hybrid Corn in Illinois, 1890-1940* (Ithaca: Cornell University Press, 1990).

²²² Earl Brookover, Jr., interview. It should be noted that mass production of beef has always been a difficult task to achieve; as ruminants, cattle are extremely inefficient converters of grains into meat. See Allen Trenkle and R. L. Willham, "Beef Production Efficiency," *Science* 198 (Dec. 1977): 1009-15.

built outside Garden City, Kansas, increasingly came to resemble outdoor factories in the 1960s. At the heart of this factory floor was an automatic feed mill, erected to transform raw grains into efficient meat-producing proteins. First the raw grain, whether milo or corn, would be pressure-cooked by steam to improve its digestibility, allowing cattle to gain more weight from less eating. Next, the grain would travel from giant storage elevators via gravity chutes to the automated mixing mill. There, on-site nutritionists pulled levers and punched buttons to arrive at an appropriate ration for each group of cattle in the lot. This was important, because young cattle fresh off grass pastures needed to be broken into the life of eating as much as they could in the shortest amount of time, and so would be fed higher ratios of roughage for a time before they were ready for "hot rations."²²³ Besides steam-flaked grains and hay for roughage, these "hot rations" would generally contain urea or soy or cottonseed meal as protein supplements, along with a dash of molasses for palatability. Additional weight gain could be achieved by adding growth hormones such as diethylstilbestrol, antibiotics like aureomycin, and manufactured protein supplements, especially the amino acid lysine.²²⁴ This scientific feeding allowed feedlot managers to reduce the amount of feed required to produce a pound of beef from nine pounds in the mid-1950s to around seven pounds in 1968; since then, even greater efficiency has been achieved.²²⁵

Once the rations were mixed, they moved via constant-flow gravity feeds into the beds of parked feed trucks. These trucks, equipped with self-unloading augers, would then be driven around acres of cattle pens, delivering the meals directly to concrete feed bunks; the cattle, who had nothing else to do, need only move a few feet to dine.²²⁶ Meat production was maximized, since "less activity leads to more efficient conversion of feed into weight gain."²²⁷ Amidst all of

²²³ Earl Brookover, Jr., interview; Lawrence A. Mayer, "Monfort Is a 'One-Company Industry'," *Fortune*, Jan. 1973, 93-4; Wood, *Kansas Beef Industry*, 292. Feed mixing is now done by computer.

²²⁴ "Hormone and Antibiotic Gives More, Better Beef," *Science News Letter*, Jun. 4, 1955, 360; "Even Better Beef Hormones?" *Farm Journal*, May 1957, 39-42; "Exciting New Beef Feed Additive," *Farm Journal*, Apr. 1958, 12-14; Dick Braun, "New Feed Additive May Cut Beef Costs," *Farm Journal*, Jun. 1960, 47. For more on feed additives and antibiotics, see Orville Schell, *Modern Meat* (New York: Random House, 1984).

²²⁵ Charles Pratt, "Beefing up on a Kansas Runway," *Topeka (Kansas) Capital-Journal*, Feb. 18, 1968, Cattle Industry Clippings, KSHS.

²²⁶ Tarvin Flannis Webb, *Improved Methods and Facilities for Commercial Cattle Feedlots* (Washington, DC: USDA, Agricultural Marketing Service, 1962); Michael Pollan, "Power Steer," *New York Times Magazine*, Mar. 31, 2002, 44-51, 68-77.

²²⁷ Michael Bates, "Paved Feedlot Increases Gain," *Topeka (Kansas) Capital-Journal*, Jul. 1, 1982, Cattle Industry Clippings, KSHS.

this faceless feeding technology, a human element still remained crucial, in the form of "cowboys" who "rode pens" on horseback, checking the cattle for any signs of illness to keep disease from spreading among the tightly confined population. At Brookover's feedyard, this job was done by men who maintained the "reddened face, rugged costume and cattle-savvy of the traditional cowboy," their very names—Sanky Ruth and "Pappy" Palen—evoking a more rustic world of open ranges.²²⁸ But their cowboy duds were in stark contrast to the "spotless white uniform" of the feed mill technician, standing amidst a rectilinear grid of steel fences surrounding meat-producing bio-machines.²²⁹ High-speed throughput was as essential on these outdoor factory floors as in any mass manufacturing enterprise. As one feedlot manager remarked in 1958, "Anyone buying steers wants them to finish fast. The quicker you can turn them in the feedlot, the more money you'll make."²³⁰ To help speed up the process, state agricultural experiment stations and land grant university researchers developed new cattle breeds, mixing Herefords, Brahmans, Shorthorns, and Angus into leaner, taller, meatier animals such as the Beefmaster, designed "for efficiency, not show ring standards."²³¹ Like the Beefmaster, the modern feedlot was a place where function took precedence over form.²³²

Irrigation and feed grains made the southern Plains an attractive place to locate the modern feedlots, but it was highways and long-haul trucks that made the system possible. Whereas in the early twentieth century urban stockyards had been "hotels" for cattle traveling from all over the country to central slaughtering plants, in the 1960s rural feedyards took over this role, providing housing for cattle on their way to the decentralized slaughtering plants that had arisen in the 1950s.²³³ Though riding in ventilated semi-trailers rather than air-conditioned

²²⁸ Charles Hammer, "Automation on the Kansas Prairie," *Kansas City Star*, Feb. 5, 1961, Cattle Industry Clippings, KSHS; Earl Brookover, Jr., interview.

²²⁹ Hammer, "Automation on the Kansas Prairie"; Pollan, "Power Steer," 44.

²³⁰ "Steers that Finish Fast," *Farm Journal*, Mar. 1958, 68L-68M.

²³¹ Charles E. Ball, "The New Beef Breeds Are Rolling," *Farm Journal*, Nov. 1956, 62-5. See also USDA, Internal Press Release, "RMA Livestock Research for 1947-48," Jun. 9, 1948, RG 136, Entry 42, Box 2, Folder 2.

²³² Similar developments took place in the postwar chicken industry; see William Boyd, "Making Meat: Science, Technology, and American Poultry Production," *Technology and Culture* 42 (Oct. 2001): 631-64; Roger Horowitz, "Making the Chicken of Tomorrow: Reworking Poultry as Commodities and as Creatures, 1945-1990," in *Industrializing Organisms*, ed. Susan R. Schrepfer and Philip Scranton (New York: Routledge, 2004), 215-35.

²³³ On urban stockyards as hotels, see Schein, "Hearing on Proposed Code of Fair Competition," 3. Ty Brookover, the grandson of Earl C. Brookover, repeatedly referred to feedlots as hotels in our interview; as he noted, the business strategies of human hotels are almost exactly the same as those of feedlots, since both have relatively high investment costs that can only be paid off by maintaining a steady influx of customers.

Airstream RVs, feeder cattle came like tourists from grasslands all over the West, South, and Midwest, gathering for some hedonic dining at the feedlot buffet trough for 90 to 120 days.²³⁴ So many four-legged tourists began arriving at the enormous Monfort feedlot constructed near Greeley, Colorado, in 1970 that a separate highway lane—marked by a green-and-white "Monfort" sign—had to be erected to prevent traffic snarl-ups.²³⁵ But once the cattle had arrived at a feedlot, they did not have much farther to go. Packer buyers began coming directly to the "hotels" to offer the guests an all-expenses-paid trip to rural slaughtering plants; on the appointed day, truckers came directly to the cattle, rather than farmers or truckers taking the cattle to a market to be sold.²³⁶ One consequence of this more direct movement of cattle was that the animals lost significantly less weight since they rarely had to walk under their own power. Another result was that the local auction markets that had begun replacing central stockyards in the 1930s began to close as an era of truly direct marketing began.²³⁷

The modern feedlot created nearly monopsonistic conditions once again in cattle marketing. As feedlots grew larger and more concentrated, fewer sales outlets existed for the cow-calf raisers of the nation's grasslands who produced feeder cattle. In the local auction markets of the 1930s and 1940s, cow-calf raisers had always had the opportunity to sell their young cattle either directly to packers or to any one of thousands of Corn Belt feeders. By 1968, however, cattle feeding had become remarkably concentrated. Although large-scale commercial lots accounted for only one percent of the nation's feedyards, that small number handled half of all fed cattle.²³⁸ But unlike the packer-owned terminal stockyards of the early twentieth century, the new near-monopsony in cattle marketing drew almost no criticisms from cattle producers. One of the primary complaints livestock raisers had against the old terminal stockyards was that cattle prices were highly volatile from day to day, and yardage charges often seemed arbitrary.

²³⁴ The matter of air-conditioning is not entirely in jest; cattle become agitated and lose a great deal of weight when they get hot in transit. As a consequence, a major issue in livestock trailer design is proper ventilation. Furthermore, many livestock truckers try to do most of their hauling at night to keep the animals cool. See Ray E. Maher, "Moving Beef on the Hoof Is Horadam's Job," *Power Wagon* (May 1948): 22-3.

²³⁵ Lawrence A. Mayer, "Monfort Is a 'One-Company Industry'," *Fortune*, Jan. 1973, 93.

²³⁶ Wood, *Kansas Beef Industry*, 292.

²³⁷ "Revolution Hits Cattle Industry," *Topeka (Kansas) Capital-Journal*, Sep. 11, 1960, Cattle Industry Clippings, KSHS.

²³⁸ Ronald A. Gustafson and Roy N. Van Arsdall, *Cattle Feeding in the United States* (Washington: USDA, Economic Research Service, 1970), 24.

At a modern yard practicing custom feeding, however, cattlemen simply paid a flat yardage charge (five cents per day was common in 1960) plus the cost of whatever feed the steer ate while in residence. Cattlemen could count on relatively stable costs.²³⁹ Furthermore, a modern feedlot maintained a staff of highly trained sales specialists who kept in daily contact with packer buyers and made every effort to negotiate the best selling price possible for their customers.²⁴⁰ As the manager of a southwestern Kansas feedlot noted in 1978, farmers who hauled their cattle into a terminal market like Kansas City might find upon arrival that buyers were offering \$1.50 per hundredweight less than the price broadcast on the morning radio program. At that point, a farmer would have to say, "What am I gonna do? I've already unloaded my cattle. If I take them out of the stockyard and put them back in my truck, it's costing me money." But out at the feedlot, the cattle would not be loaded until the price was right; "farmers [got] a better deal selling directly to the packer."²⁴¹ Feedlots became giant cattle factories not just because they could achieve economies of scale and greater throughput in cattle production, but because their very size provided farmers with more formidable power in the market.²⁴²

Agricultural policymakers in the USDA viewed the growing marketing power of industrial feedlots as a permanent solution to the old problem of a large number of unorganized producers selling cattle in a non-competitive marketplace. As the new forms of direct marketing took firm hold in the late 1950s, urban stockyard managers made efforts to have the Packers and Stockyards Division implement rules that would slow the geographical movement of cattle marketing into the countryside. In particular, urban stockyard owners who had been required since the passage of the Packers and Stockyards Act of 1921 to register their rates with the Secretary of Agriculture argued that these rate regulations were an unfair burden, allowing packer buyers to bypass the central stockyards in favor of unregulated direct buying stations and country markets. The stockyards backed up their request by providing evidence that packers were using direct buying to take advantage of farmers in unregulated markets.²⁴³ As a

²³⁹ McCoy and Wuhrman, *Economic Aspects of Commercial Cattle Feeding*, 15.

²⁴⁰ Gustafson and Van Arsdall, *Cattle Feeding*, 47; Earl Brookover, Jr. interview.

²⁴¹ Paul Stevens, "Feedlots Give Ranchers More Market Leverage," *Wichita Eagle*, Aug. 18, 1978, Cattle Industry Clippings, KSHS.

²⁴² Webb, *Improved Methods*, 17.

²⁴³ Roy W. Lennartson to the Secretary of Agriculture, "Proposed Amendments in the Regulations Issued under Authority of the Packers and Stockyards Act," May 6, 1954, RG 136, Records Relating to the Administration of the

consequence, the Packers and Stockyards Act was amended in 1958 to bring country buying stations under its jurisdiction; this meant that "every little yard, regardless of where located," was required to register its rates with the USDA—this brought approximately 2,500 livestock markets under the eye of the Secretary of Agriculture.²⁴⁴

But if USDA policymakers were willing to offer this conciliation to the central stockyards, they had no desire to put any limits or regulations on direct buying at feedlots. In 1961 representatives of the central stockyards convinced the House Agriculture Committee to hold hearings on the problem of direct buying by packers. Direct marketing had led to precipitous declines in sales of slaughter cattle at terminal markets since the 1920s; it appeared by 1961 that the central stockyards were nearing extinction. In 1960, the members of the American Stockyards Association received only 59 percent of the nation's cattle for slaughter; as late as 1952, the percentage had been as high as 89 percent. This was a problem, argued A. Z. Baker, president of the American Stockyards Association, because it made possible the "concentration of buying power in fewer hands," with transactions occurring almost secretly in the countryside.²⁴⁵ R. E. Cunningham, representing the seven largest terminal stockyards at the hearings, pointed out that in ancient Constantinople, lamb slaughterers who bought animals outside the city were "beaten, shorn, and banished" for direct buying; Cunningham implied that he would have liked to see Congress pass a similar law to prevent the decline of the central stockyard.²⁴⁶ But USDA offered no support for efforts to limit direct marketing. As the Assistant Secretary of Agriculture informed the House committee: "The Department believes that packers and other buyers should be free to purchase, and that producers and other sellers should be free to sell, livestock for slaughter at any point."²⁴⁷ In this, the USDA agreed with meatpackers and the American National Cattlemen's Association, who argued that direct buying *increased*

Packers and Stockyards Act of 1921, 1941-1967, Entry 32, National Archives II, College Park, MD, Box 1, Folder 2; Donald A. Campbell (Director, Packers and Stockyards Division) to Clarence H. Girard, "Proposed Change in Rate Procedure," Apr. 21, 1966, *ibid.*; Solicitor to the Secretary of Agriculture, "Revision of Regulations under the Packers and Stockyards Act," May 6, 1954, *ibid.*; Roy Lennartson to Rep. W. C. Cole, Mar. 16, 1954, RG 136, Entry 18, Box 1, Folder 5; John H. Davis to Sen. Hugh Butler, Feb. 16, 1954, RG 136, Entry 18, Box 1, Folder 3.

²⁴⁴ *Statutes at Large* 72 (1958): 1749; House Committee on Agriculture, *Amendment of Packers and Stockyards Act*, 85th Cong., 1st sess., 1957, H. Rept. 1048. Quote is from House Committee on Agriculture, *Equalize Livestock Marketing Competition, Hearings*, 87th Cong., 1st sess., Aug. 23, 24, 1961, 38.

²⁴⁵ House Committee on Agriculture, *Equalize Livestock Marketing Competition*, 87th Cong., 1st sess., 29, 30.

²⁴⁶ *Ibid.*, 89.

²⁴⁷ *Ibid.*, 3.

competition in the livestock marketplace, since "the livestock producer today has the widest possible choice of markets in which he may elect to sell."²⁴⁸ Only the National Farmers Organization supported the central stockyards in their belief that the growth of commercial feedlots threatened to replace both terminal markets and country auctions with direct, unregulated buying.²⁴⁹ As it soon turned out, the National Farmers Organization was right. Chicago's Union Stock Yard closed in 1970 for lack of business, while the terminal markets that remained in cities such as Omaha and Kansas City began to focus solely on sales of feeder cattle, rather than slaughter cattle. Many local auction yards and sale barns also closed down, useless in an age of direct feedlot buying.²⁵⁰ The marketing machinery of the new beef industry had penetrated deep into the countryside.

"Eat Beef, Stay Slim"—The Rise and Fall of Supermarket Monopoly Power

One of the most fascinating visual aspects of Earl C. Brookover's original feedyard was a sign on the feed elevator, painted in 6-foot-tall red letters, declaring "Eat Beef, Stay Slim." Though somewhat tongue-in-cheek, the sign was meant to inform passersby on Highway 50 that the modern feedlot was dedicated to producing lean, lower-fat beef. Supermarkets of the 1950s, Brookover understood, were increasingly demanding beef cuts with less fat marbling and a thinner coating of white, rather than yellow, fat. Cattle fed primarily on grain instead of grass tended to exhibit these qualities, making the modern feedlot an ideal supplier for supermarkets seeking to dominate the retail beef trade.²⁵¹ For a brief period from the early 1950s to the late 1960s, supermarkets did in fact come to exercise impressive power over the beef industry. Like the efforts of several generations of meatpackers before them, supermarketers deployed technologies of distribution to gain influence in the marketplace. Once again, trucks and highways provided flexible forms of transportation that allowed for shifting power relations in the political economy of beef marketing.

²⁴⁸ Ibid., 16, 55.

²⁴⁹ Ibid., 70-7.

²⁵⁰ Skaggs, *Prime Cut*, 190; Mike Perrault, "On the Block: Remnants of Once-Flourishing Livestock Business to Be Sold," *Garden City Telegram*, Aug. 3, 1988, Cattle Industry Clippings, KSHS.

²⁵¹ Ray Reiman, "Major Changes Here in Beef Cattle Trends," *Successful Farming*, Jun. 1963, 25.

The rather sudden rise of supermarkets as the most powerful actors in the beef economy was premised partly on the decline of the Big Four packers in the 1950s, but also on a new wholesaling method called "specification buying." In the days when the Big Four's private brands and grading systems provided the only guidance for retail meat buyers seeking a particular quality of beef, supermarkets were essentially forced to take what the packers offered. Since each packer had slightly different grading systems, these offerings were never exactly the same. But with the arrival of federally mandated USDA grading in World War II and the Korean War, supermarketeters discovered they could achieve more uniform-quality supplies without having to rely on the packers' private brands. Safeway Stores became one of the most demanding customers in the 1950s, specifying in contracts with packers that they provide only USDA Prime or Choice cuts.²⁵² Through such specification buying, supermarket managers sought to use the USDA grades to convince customers that their store had the most "consistent quality meat," especially since marketing surveys had found that the primary reason shoppers chose to patronize one supermarket over another was the uniformity of its meat selection.²⁵³ Specification buying allowed supermarkets to achieve "absolute uniformity of the product in the retail case," a form of advertising more powerful than any other in attracting customers picky about the taste of beef.²⁵⁴ These specifications worked back through the packers to feedlot managers, who began to "feed primarily for chain store demands," seeking to produce a taller, leaner, meatier steer in the 900 to 1200 pound range, rather than the squat 1500-pound beasts formerly prized by cattlemen and consumers alike.²⁵⁵

The importance of lean, consistent beef for supermarket success led a few chains to establish vertically integrated beef operations in the late 1950s and early 1960s. Safeway, American Stores, Food Fair, and especially National Tea began competing directly with their former suppliers, the large and small meatpackers, by buying cattle directly at feedlots and

²⁵² Skaggs, *Prime Cut*, 179. See also Ovid Bay and John Rohlf, "Beefmen Face up to Consumer Whims," *Farm Journal*, Feb. 1958, 52.

²⁵³ House Committee on Agriculture, *Equalize Livestock Marketing Competition*, 88th Cong., 1st sess., 34.

²⁵⁴ *Ibid.*, 93.

²⁵⁵ James I. Sprague, "Big Western Feed Lots, What You Can Learn from Them," *Successful Farming*, Feb. 1963, 64-5, 111; Tarvin Flannis Webb, *Improved Methods and Facilities for Commercial Cattle Feedlots* (Washington, DC: USDA, Agricultural Marketing Service, 1962), 6; Pollan, "Power Steer," 47.

sending them to their own slaughtering factories.²⁵⁶ The availability of reliable refrigerated truck trailers made this possible, since supermarket chains—or any other firm, for that matter—need not rely on existing infrastructures for distributing beef, but could build or lease their own at relatively low cost. The National Tea Company, for instance, built both its own feedlot and packing plant in the Denver area in the late 1950s. The Food Fair chain of supermarkets operated at least one slaughtering plant in the 1950s.²⁵⁷ This apparent trend toward supermarket control of both livestock markets and wholesale meat prices brought protests from concerned farmers. Gordon Shafer, a Missouri livestock raiser representing the National Farmers Organization before a House committee considering a bill to prevent supermarket chains from owning slaughtering facilities, stated that supermarkets with their own feedlots had gained "tremendous buying power" which they were using "primarily for the purpose of controlling the prices paid to farmers."²⁵⁸ Following a rapid drop in livestock prices in 1963, the National Farmers Union passed a resolution in 1964 calling for Congressional investigations into "the disastrously low prices forced upon [livestock] producers by large food chains through their power to administer prices."²⁵⁹

Meatpackers were just as concerned about the increasing power of the food chains. Even when not running their own packing plants, supermarket buyers began dictating harsh terms to the packers. Chain buyers refused to enter into long-term contracts with any one packer, and strove to divide their purchases evenly among different slaughterers to assure competitive pricing.²⁶⁰ This practice, known as "bid and acceptance," meant that a meatpacker had to accept "unconscionable price concessions" demanded by chain stores or face blacklisting.²⁶¹ Some chains complemented this tactic with "group purchasing," whereby a number of firms would

²⁵⁶ House Committee on Agriculture, *Equalize Livestock Marketing Competition*, 87th Cong., 1st sess., 8-14; House Select Committee on Small Business, *Small Business Problems in Food Distribution*, 86th Cong., 2d sess., 1960, H. Rept. 2234; James Roosevelt, "Food Chain Store Meat Packing Trend: A Concentration of Economic Power," *Quick Frozen Foods* (Mar. 1962): 234.

²⁵⁷ House Committee on Agriculture, *Equalize Livestock Marketing Competition*, 88th Cong., 1st sess., 67; Senate Committee on Agriculture and Forestry, *Regulation of the Meat Industry, Hearings*, 85th Cong., 2nd sess., Apr. 17, 1958, 47.

²⁵⁸ House Committee on Agriculture, *Equalize Livestock Marketing Competition*, 88th Cong., 1st sess., 4, 3. See also "Are Chain Stores Hurting Beef Prices?" *Farm Journal*, Feb. 1957, 48.

²⁵⁹ Senate Committee on Commerce, *Study of Food Marketing, Part I, Hearing*, 88th Cong., 2nd sess., Mar. 23-25, 1964, 6.

²⁶⁰ Aduddell and Cain, "Consent Decree," 366.

²⁶¹ Butz and Baker, *Changing Structure*, 33-9.

appoint a single buyer to represent them in dealings with meatpackers, creating a uniform wholesale price unaffected by competition.²⁶² In 1964 it appeared, as Senator Gale McGee of Wyoming put it, that supermarket chains had "repealed the laws of supply and demand in the marketing of beef."²⁶³

But despite a number of House and Senate hearings into these "problems in food distribution," no significant antitrust action was undertaken against the chains in the 1960s. Supermarkets never took over the opprobrious title of "Beef Trust." Part of this was due to the complexity of the problem of monopoly, nicely summed up by Senator Philip A. Hart of Michigan: "Sometimes I think that the antitrusters are their own worst enemies. Basically, they want meat on the table at the lowest possible prices—[but] instead of saying that bluntly, plainly, and simply, the economists talk in terms of concentration of power, and the lawyers talk in terms of ... market restraints."²⁶⁴ Supermarkets generally delivered low prices, so consumers had little reason to be concerned about the problem of monopoly; livestock producers and meatpackers concerned about supermarket control of the beef industry had little opportunity to convince a broad segment of the populace that monopoly power was not in the public interest. Cattlemen like John F. Odea of the Denver Union Stock Yards could blame the consumer for being "duped into believing that she sets the price [for beef] and benefits directly in constantly lower prices," but such an anti-consumer attitude would not be likely to gain much support for antitrust action.²⁶⁵ Meanwhile, supermarkets retorted that vertical integration in beef production was merely the result of "good business" strategies that allowed "lower prices."²⁶⁶ This view was further supported by the USDA's Agricultural Marketing Service economists, who saw modern feedlots and supermarkets meeting the demand of the "affluent and mobile consumer" for huge amounts of high quality beef at low cost.²⁶⁷ Even if the industry had become more monopolistic than it had been in decades, the issue of monopoly was not in itself a problem worthy of regulatory attention.

²⁶² Senate Committee on Commerce, *Study of Food Marketing, Part I*, 4.

²⁶³ *Ibid.*, 52.

²⁶⁴ *Ibid.*, 7.

²⁶⁵ *Ibid.*, 60.

²⁶⁶ House Committee on Agriculture, *Equalize Livestock Marketing Competition*, 88th Cong., 1st sess., 31.

²⁶⁷ *Ibid.*, 86-7.

In any case, supermarkets set the stage for their own declining power in the beef industry by making low price a basic fact of the American standard of living in the postwar era. Inexpensive beef at a time of high consumer incomes made the 1960s a decade of rapidly rising demand for meat. Backyard barbecues groaned under the increasing weight of Choice and Prime steaks, as annual per capita consumption of beef rose from 57 pounds in 1955 to 70 pounds in 1965, reaching a peak of nearly 80 pounds of beef per American in 1970.²⁶⁸ By that time, demand began outpacing the supply of beef, causing inflation that could only be blamed on "increasing affluence" as "Americans [were] indulging in their long-standing love of beef."²⁶⁹ Beef steaks reached record high prices in the summer of 1969, and although "housewives seem[ed] hardly daunted" by the costs that year, the rising price of meat would within a few years cause a significant consumer backlash.²⁷⁰ It was in this context that a new breed of meatpackers emerged, revolutionizing the production and distribution of beef so thoroughly that low consumer prices offset any potential concern about a renewed monopoly that made the old Beef Trust seem tiny by comparison.

The "Logic" of Boxed Beef

The price of meat skyrocketed in the early 1970s, and it appeared to many consumers that supermarkets were to blame. *Life* magazine reported on the anger of Fred and Myrna Green, a solidly middle-class family with two station wagons and a swimming pool who could barely afford a package of hamburger in the spring of 1972; Myrna complained that they "[hadn't] had a steak for I don't know how many months" and was convinced that supermarkets were "out to gouge the customer."²⁷¹ A more likely explanation for the high prices was unchecked consumer demand for beef, coupled with a jump in feed grain prices in 1972-73 following a

²⁶⁸ USDA Economic Research Service, "Food Consumption (Per Capita) Data System," accessed online at <<http://www.ers.usda.gov/data/foodconsumption/>>, Apr. 28, 2004. These numbers reflect mature beef only, not veal.

²⁶⁹ "Housewives' Beef," *Time*, Jun. 13, 1969, 94.

²⁷⁰ "Beef Sales Boom and So Do Prices," *U.S. News and World Report*, Jun. 9, 1969, 68.

²⁷¹ "Meat Counter Miseries: As Food Costs Soar, Consumers Are Furious," *Life*, Apr. 14, 1972, 34. See also James Rowen, "Greyhound Steak, Sauce Oppenheimer," *Nation*, Jun. 5, 1972, 718.

surprisingly large purchase of American wheat by the Soviet Union.²⁷² But whatever the cause, consumers reacted to a 75 percent rise in meat prices in early 1973 by angrily demanding that President Richard Nixon's administration do something to control spiraling costs. Nixon responded on March 29, 1973, announcing a freeze on wholesale and retail prices of meat, but meatpackers and retailers easily found ways to skirt the barely enforced price controls.²⁷³ On April 1, a spontaneous grassroots meat boycott erupted across the nation, orchestrated by middle-class consumer groups such as Fight Inflation Together (Atlanta, Georgia), Women's War on Prices (Wilmette, Illinois), Citizens Action Program (Chicago), and the Consumer Federation of California. Retail sales of meat dropped by 50 to 80 percent during the weeklong boycott, but supermarkets generally refused to lower their prices; the manager of Big Bear Stores defended the decision, saying "We can't price by emotion."²⁷⁴ But emotions ran high among consumers accustomed to low-priced beef and seeking easy solutions to complex economic problems. With neither an obvious Beef Trust to attack nor a government willing to enforce strong OPA-style price controls, *Fortune* magazine predicted that only a "profound change in the techniques of ... beef production" could bring prices down.²⁷⁵ In fact, this is exactly what happened.

A new breed of meatpackers emerged by the mid-1970s to fulfill consumer expectations for low-priced beef. Firms such as Iowa Beef Packers (IBP), Spencer Foods, National Beef, and Excel and Missouri Beef (later merged as MBPXL) began as relatively small firms in the early 1960s. By 1980, a few of these firms—especially IBP—would establish a near-complete monopoly on beef processing and distribution, but in the beginning they could barely be distinguished from other "cinder-block" packers in the rural Midwest. Like the earlier

²⁷² Allen J. Matusow, *Nixon's Economy: Booms, Busts, Dollars, and Votes* (Lawrence: University Press of Kansas, 1998), 65-6, 224-8; Roger B. Porter, *The U.S.-U.S.S.R. Grain Agreement* (Cambridge, MA: Harvard University Press, 1984); "Buying Beef: What Pushed Prices Up?" *Consumer Reports*, Sep. 1974, 656-8.

²⁷³ Matusow, *Nixon's Economy*, 228-9. Packers avoided the ceilings by having their retail customers buy cattle and pay the slaughterers to process the beef on a cost-plus basis. See *Small Business Problems in the Marketing of Meat and Other Commodities: Part 5, Anti-Competitive Practices in the Meat Industry*, Hearings, 96th Cong., 1st sess., Jul. 23, 24, 1979, 35.

²⁷⁴ Mary Bralove, "The Meat Revolt: Stores, Packers, Farms Begin to Feel Impact of Housewives' Outrage," *Wall Street Journal* (hereafter *WSJ*), Mar. 29, 1973, 1, 30; "Meat Retailers Say Boycott Slashed Sales but Prices Remain Tied to Wholesale Costs," *WSJ*, Apr. 9, 1973, 4; "Boycott of Meat Cuts Into Sales In Its First Day," *WSJ*, Apr. 3, 1973, 2; Robert D. McFadden, "Boycott of Meat Ends with a Call for New Protests," *NYT*, Apr. 8, 1973, 1; "Meat Sales Drop 80% in Places as the Boycott Begins," *NYT*, Apr. 3, 1973, 1.

²⁷⁵ Mayer, "Monfort Is a 'One-Company Industry'," 91.

generation of rural meatpackers, the new breed of packers had a basic strategy of building single-story, single-species slaughterhouses in areas of plentiful cattle and cheap labor. But these new packers ratcheted this relocation strategy up several notches, aiming for a degree of "rural industrialization" that would give them unprecedented control over livestock prices and retail distribution of meat.²⁷⁶

The first stage of the rural industrialization strategy was a renewed westward movement of meatpacking factories into the heart of the feedlot belt. **[See Map 3.6]** With the growth of feedlots on the High Plains in the 1960s, many meatpackers realized that they were spending too much money transporting live cattle all the way from western Kansas or Colorado to slaughterhouses in Iowa or Illinois. A number of feedlot operators also realized this. Kenneth Monfort, manager of the giant Monfort feedyards near Greeley, Colorado, entered the packing business "more or less by accident" in 1960 after deciding that there were not enough packers in his area to absorb the 3,400 fattened cattle emerging from his yards each week.²⁷⁷ Producers Packing Company (later Farmland) in Garden City, Kansas, was similarly established by a group of livestock raisers in the southern Plains who wanted a local packing plant to absorb a "uniform supply of beef" from "all the feedlots around" that area.²⁷⁸ But no meatpacking firm was more focused on moving its factories to the new source of cattle supply than IBP. Under the leadership of two previous unknowns in the industry, Currier J. Holman and Andrew D. Anderson, IBP built its first plant in Denison, Iowa, in 1961 with the help of a Small Business Administration loan.²⁷⁹ From there, IBP built successively larger plants over the next two decades, each one deeper in the heart of the Feedlot Belt—in Dakota City, Nebraska (1967); Emporia, Kansas

²⁷⁶ Michael J. Broadway, "From City to Countryside: Recent Changes in the Structure and Location of the Meat- and Fish-Processing Industries," in *Any Way You Cut It*, ed. Donald D. Stull, Michael J. Broadway, and David Griffith (Lawrence: University Press of Kansas, 1995), 27. See also Kathleen Stanley, "Industrial and Labor Market Transformation in the U.S. Meatpacking Industry," in *The Global Restructuring of Agro-Food Systems*, ed. Philip McMichael (Ithaca: Cornell University Press, 1994), 129-44.

²⁷⁷ House Committee on Agriculture, *Prohibit Feeding of Livestock by Certain Packers*, 227.

²⁷⁸ "Garden City Packing Firm Tabs Officers," *Topeka (Kansas) State Journal*, Dec. 16, 1963, Meat Industry Clippings, KSHS; "Packers to Build: Project at Garden City to Cost One Million," *Kansas City Times*, Oct. 9, 1964, *ibid.*; "Packing Plant Interest Grows," *Wichita Eagle*, May 9, 1965, *ibid.*; quote from Peg McMahon, "Feedlots Transform Western Kansas," *Kansas City Star*, Oct. 10, 1971, 12-4, Feedlots Subject File, FCHS.

²⁷⁹ Holman and Anderson actually had a difficult time securing funding for IBP; besides relying on the SBA loan, they claimed to have "mortgaged our wives and our kids and our cars." "Triumph of Logic," *Forbes*, Dec. 15, 1968, 48.

(1968); Amarillo, Texas (1974).²⁸⁰ In 1979, IBP began construction of what remains the largest beefpacking plant in the world, just outside Garden City, Kansas—seven miles west of Earl Brookover's original feedlot.²⁸¹ Though IBP was the largest, other firms such as National Beef, Missouri Beef, Excel, and Spencer followed its lead, establishing giant plants "in the heartland of feed grains" in the 1960s and 1970s.²⁸² By 1977, nine western states²⁸³ accounted for 70 percent of the nation's beef slaughter.²⁸⁴

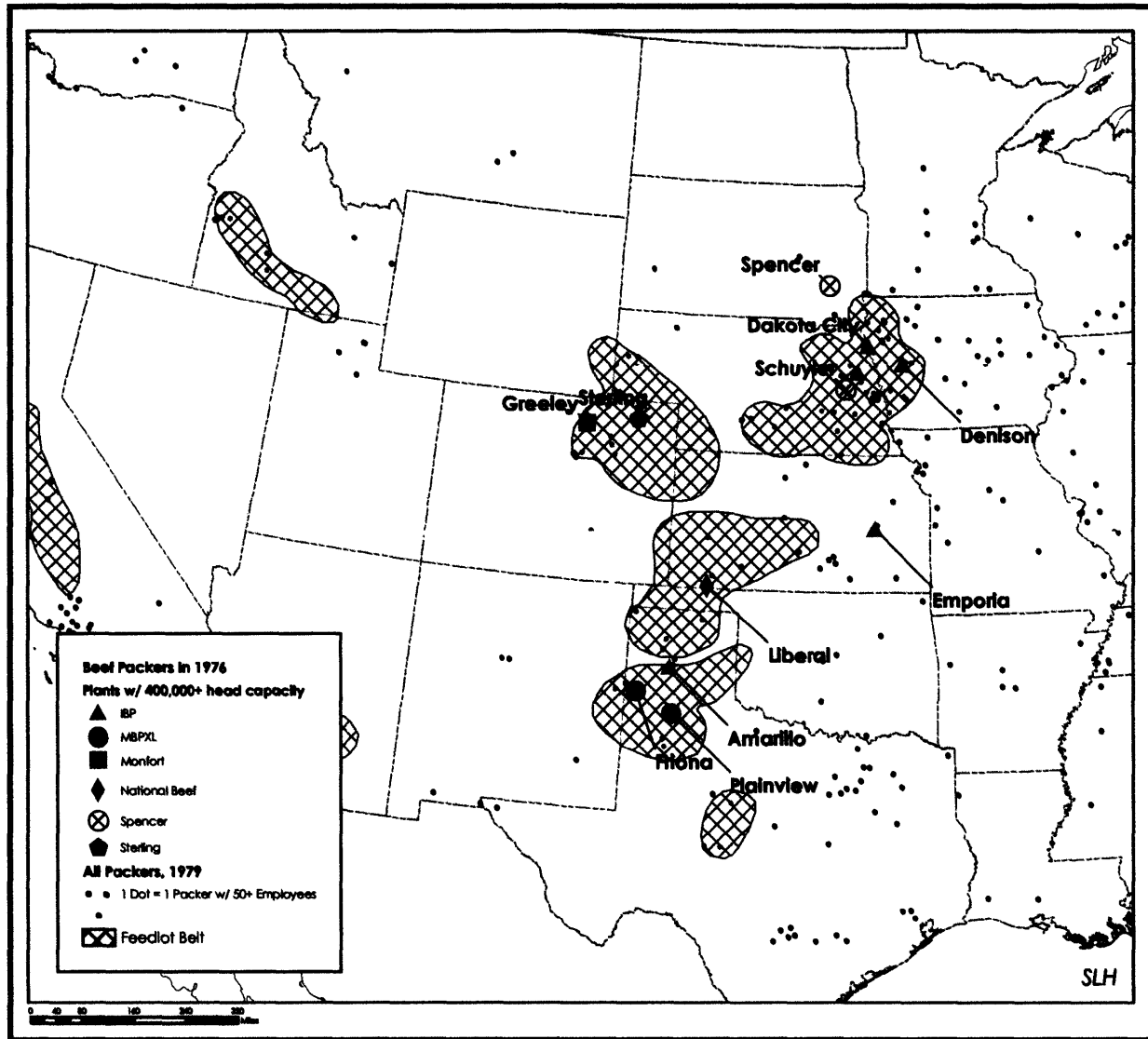
²⁸⁰ Dale C. Tinstman and Robert L. Peterson, *Iowa Beef Processors, Inc.: An Entire Industry Revolutionized!* (New York: Newcomen Society, 1981), 9.

²⁸¹ "Meat Plant to Garden City," *Topeka (Kansas) State Journal*, Sep. 4, 1979, Meat Industry Clippings, KSHS; "IBP Looks toward Moving In," *Garden City Times*, Apr. 10, 1980, *ibid*.

²⁸² Lynne Holt, "Feedlot Beefs up Swiftly in Liberal Supply Area," *Wichita Eagle*, Oct. 29, 1969, Cattle Industry Clippings, KSHS; Fred Kiewit, "Kansas Beef to the Nation," *Kansas City Star*, Aug. 15, 1971, Meat Industry Clippings, KSHS.

²⁸³ Iowa, Nebraska, Minnesota, Missouri, Colorado, Kansas, Texas, Oklahoma, and New Mexico.

²⁸⁴ Willard F. Williams, *The Changing Structure of the Beef Packing Industry* (Lubbock, TX: TARA, 1979), 56. In 1986 the state of Kansas had a higher meatpacking output than any other state, including the much larger state Texas. Tom Webb, "No. 1 in Beef: Kansas Plants Lead Country in Production," *Wichita Eagle*, Jan. 25, 1986, Meat Industry Clippings, KSHS; Donald D. Stull and Michael J. Broadway, "The Effects of Restructuring on Beefpacking in Kansas," *Kansas Business Review* 14 (Fall 1990): 10.



Map 3.6: Rural Meatpacking in the 1970s

Beefpackers such as IBP undertook a "rural industrialization" strategy in the 1970s, beginning in western Iowa and ultimately locating their largest factories in the heart of the western feedlot belt by the late 1970s. Sources: Bureau of the Census, *County Business Patterns* 1979; Williams, *Changing Patterns*, 17.

It might seem that this movement of beefpacking into the heart of cattle country resulted from the working out of an obvious logic. In fact, *Forbes* magazine declared in 1968 that IBP's strategy was a "triumph of logic," allowing the packer to reduce transportation costs to a minimum by placing plants within an hour's trucking distance from feedlots.²⁸⁵ A circle seemed

²⁸⁵ "Triumph of Logic," *Forbes*, Dec. 15, 1968, 48; House Committee on Agriculture, *Prohibit Feeding of Livestock by Certain Packers*, 24.

to have been completed. The nation's beef industry had begun with cattle drives to Old West towns such as Dodge City, Kansas, where cattle embarked on long railroad trips to the halfway point of Chicago, in order to continue the journey to the populous East as swinging carcasses.²⁸⁶ By the late twentieth century, Dodge City, Kansas was once again a booming cowtown, but this time the cattle did not begin their long journeys eastward until they had been slaughtered. Packers no longer had to swallow the expense of shipping inedible hides, hooves, and entrails halfway across the country. But this "logic" did not become possible until modern highways and refrigerated trailers allowed long-distance transportation of slaughtered meat that was fast enough to avoid losses from rotting and shrinkage. As early as 1883, Count Marquis de Mores had attempted to fulfill this logic, building meatpacking plants deep in cattle country to save on transportation costs, but failed utterly; his "colossal scheme" failed to take into account the need for a year-round supply of cattle, a pool of skilled labor, and well-established ties to retail markets.²⁸⁷ Furthermore, the logic of IBP's strategy of rural industrialization did not become politically acceptable until after American consumers had grown so accustomed to inexpensive beef that they were willing to accept a new monopoly in order to get it.

And a monopoly they did receive. First, the new breed of meatpackers reinstated an impressive control over the prices and terms on which they purchased live cattle, much as the Beef Trust had done by controlling central stockyards in the early twentieth century. In the mid-1960s packers such as IBP began paying for animals based on carcass weights rather than live weights. This meant that the seller of an animal could not physically see that he was receiving a fair price, since the packer set the price after slaughter within the physical confines of the plant, rather than out in the open at a sale yard.²⁸⁸ But even when not engaging in such potentially illicit practices, IBP's cattle buyers perfected the system of direct buying in the mid-1960s. IBP's buyers traveled by car each day from feedlot to feedlot, using two-way microwave radios to keep in constant contact with each other as well as a central dispatcher in Dakota City, Nebraska. This

²⁸⁶ "Meat Packing Industry Blazed Early Trails to Prosperity," *Kansas Business* (Nov. 1937): 6-7, 23-4; "Packers and Stockyards Near Age 50," *Wichita Eagle*, Nov. 25, 1937, Cattle Industry Clippings, KSHS.

²⁸⁷ Yeager, *Competition and Regulation*, 66.

²⁸⁸ Glenn B. Bierman (Acting Director, Packers and Stockyards Division) to Clarence H. Girard, "Proposed Regulation—Carcass Grade and/or Weight Purchasing by Meat Packers," Apr. 17, 1967, RG 136, Entry 32, Box 1, Folder 2.

instantaneous feedback on market conditions prevented them from ever having to buy at a price that did not meet with approval from headquarters.²⁸⁹

But the most basic business goal of the rural industrialization strategy was not simply to gain control of cattle supplies. A voluminous, steady stream of live cattle was only a necessary condition for IBP's ultimate goal of achieving rock-bottom prices for consumers while reaping big profits. This does not mean IBP's managers entertained particularly pro-consumer sentiments; instead, low retail prices were merely a way of achieving "market domination" by underselling all competitors.²⁹⁰ The path to driving down prices began with capturing control of supplies, but continued with exploitation of unorganized rural workers. IBP was widely admired by other meatpackers in the 1960s for its steadfast refusal to peacefully negotiate wage contracts with meatpacking unions. In particular, the company made every effort to avoid the "master contract" achieved by employees at all of the old-line packing firms such as Armour, Swift, and smaller independents like Oscar Mayer in the early 1950s.²⁹¹ Strikes were commonplace in IBP plants, including an extremely violent episode at the Dakota City plant in 1969, as meatpacking unions sought—and usually failed—to bring the renegade firm's wages in line with the rest of the industry.²⁹² IBP's first president, Currier J. Holman, was so resolved to keep wages low that he told his management team to prepare to have one of every three plants out on strike at any given time.²⁹³ A union representative recalled in 1977 that Holman "once said you run a business the way you run a war, and he certainly applied that to labor."²⁹⁴ Even a former IBP executive found the firm's anti-labor culture to be downright militant: "Iowa Beef makes the Marine Corps look like pantywaists."²⁹⁵ In addition to substandard wages, IBP demanded incredible productivity from workers. A worker on the kill floor of IBP's Garden City plant found the pace of work so

²⁸⁹ Jerry Fetterolf, "Final Touches Are Due on Emporia Packing Plant," *Wichita Eagle*, Apr. 27, 1969, Meat Industry Clippings, KSHS; "Ahead of the Herd in Automation," *BW*, Jun. 27, 1964, 106.

²⁹⁰ House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 9; Tinstman and Peterson, *Iowa Beef Processors, Inc.*, 12.

²⁹¹ Horowitz, *Negro and White*, 253-68; Deborah Fink, *Cutting into the Meatpacking Line: Workers and Change in the Rural Midwest* (Chapel Hill: University of North Carolina Press, 1998), 51.

²⁹² "Fighting over the Cost of Cutting Meat," *BW*, Nov. 22, 1969, 74-6; "Iowa Beef Processors Plans to Lay off 290 at Nebraska Plant," *WSJ*, Jul. 29, 1970, 2; "Iowa Beef Employees Vote End of Union Representation," *WSJ*, Jun. 29, 1970, 26; "Bad Old Days," *Time*, Aug. 9, 1982, 47-8.

²⁹³ James Cook, "Those Simple Barefoot Boys from Iowa Beef," *Forbes*, Jun. 22, 1981, 35.

²⁹⁴ "Iowa Beef Becomes a Test for Management," *BW*, Mar. 14, 1977, 28-9.

²⁹⁵ "Oxy's Bid to Blend Energy with Food," *BW*, Jun. 15, 1981, 37.

intense that he did not "have time to sweep sweat from [his] face."²⁹⁶ Managers realized that few people could maintain such a pace for very long, and so considered an annual employee turnover rate of up to 96 percent to be "low."²⁹⁷

The new breed of meatpackers also sought to drive down the cost of production by introducing new technologies to the process of cattle slaughter. In particular, firms like IBP effectively eliminated the old production bottleneck during the process of dehiding that had prevented a carcass from moving continuously on the disassembly line. A group of workers deploying powered saws each made simple cuts that eliminated the need for skilled hidiers to pull the carcass off the conveyor.²⁹⁸ Minute divisions of labor were introduced throughout the rest of the slaughtering process, requiring "but a minor responsibility" from each employee, allowing the company to hire unskilled workers and train them in a matter of hours.²⁹⁹ Plants were carefully designed to allow rapid, horizontal flow of the carcass through intensely refrigerated spaces, dramatically reducing shrinkage of the meat.³⁰⁰ In 1964, IBP took a live animal from the load-in dock to the load-out cooler in only 32 minutes; a decade later the company had the process down to 20 minutes.³⁰¹ The combination of low wages, deskilling, division of labor, and rapid throughput allowed a modern IBP-style plant to slaughter a cow for less than \$15 in the late 1970s, while old-line packers experienced costs of \$18 to \$20 per head.³⁰² The new breed of packers sought further cost advantages by finding profitable uses for the byproducts of slaughter. Liver, tongue, sweetbreads, and cheek meat were sold to French chefs as "variety meats," while blood became animal feed, hearts and meat scraps became hamburger, and hides became shoes.³⁰³ By shaving costs and boosting production, IBP was able

²⁹⁶ Stull and Broadway, "Effects of Restructuring," 13.

²⁹⁷ Stull and Broadway, "Effects of Restructuring," 14; Fink, *Cutting into the Meatpacking Line*, 6-38.

²⁹⁸ Barbara Oringderff, "An Inside Look at Packing Plant's Operations," *Garden City Telegram*, Oct. 28, 1965, 5, Beefpacking Subject File, FCHS.

²⁹⁹ House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 8.

³⁰⁰ Tinstman and Peterson, *Iowa Beef Processors*, 8; "Armour Plant Remodeling, Expansion Due," *Topeka (Kansas) Capital*, Jan. 26, 1968, Meat Industry Clippings, KSHS.

³⁰¹ "Ahead of the Herd in Automation," 106; "Rough Riders," *Forbes*, Jun. 15, 1974, 65.

³⁰² House Committee on Small Business, *Small Business Problems in the Marketing of Meat and Other Commodities: Part 4, Changing Structure of the Beef Packing Industry, Hearings*, 96th Cong., 1st sess., Jun. 25, 26, 1979, 10.

³⁰³ Evelyn Steimel, "French Chefs May Be Using Garden City Products," *Hutchinson (Kansas) News*, Mar. 4, 1969, Meat Industry Clippings, KSHS; "300,000 Pounds Dressed Beef a Day Is Goal," *Garden City Telegram*, Oct. 28, 1965, 2, Beefpacking Subject File, FCHS. Armour & Company had pioneered the profitable sale of byproducts—such as hooves and horns for buttons and bones for fertilizer—in the early twentieth century, but the arrival of plastics and chemical fertilizers had wiped out the market for most of those items by the late 1950s.

by the late 1960s to undersell nearly all of its competitors while making remarkable profits. The tiny company that began in 1960 with a \$300,000 Small Business Administration loan became a ranking member of the *Fortune* 500 by 1969, with \$534 million in annual sales.³⁰⁴

Despite its impressive growth in the 1960s, IBP would not achieve low prices and monopoly power to rival the strength of the old Beef Trust until it achieved control over the distribution of fresh meat. This came with the firm's introduction of boxed beef in 1969, a technology that quickly proved as revolutionary as Gustavus Swift's refrigerated railcar had been in the 1880s. The concept of boxed beef was relatively simple. Rather than ship entire carcasses to wholesale or retail butchers to be deboned and cut into consumer-sized portions, IBP broke carcasses down into consumer cuts at its own rural plants, starting in Dakota City in 1969. These retail-ready cuts were wrapped in vacuum-sealed plastic bags, placed in cardboard boxes, and trucked via refrigerated trailer directly to the loading docks of supermarkets or other institutional customers. This led to enormous savings in transportation costs—as much as 30 percent less than swinging beef—since only the meat that would end up in the retail meat case made the trip to the city. Boxed packaging also allowed for much more efficient use of trailer space; unlike the awkward shape of a swinging carcass, a box could be tightly stacked from wall-to-wall and floor-to-ceiling. Truckers could thus haul 4,000 more pounds of boxed beef than carcass meat. On top of all of this, the vacuum-sealed Cryovac bags extended the shelf life of fresh meat by nearly a month, making the distance between Dakota City and New York a relatively trivial matter.³⁰⁵ Boxed beef was not a new concept in 1969; the Army Quartermaster Corps had pioneered the development of consumer-ready meat packaging during World War II, and Armour had built on this work during the 1950s in conjunction with the U.S. Air Force.³⁰⁶ But even when IBP re-introduced boxed beef in 1969, success did not come immediately in achieving the seemingly obvious logic of high-volume direct meat distribution.

³⁰⁴ "The Youngest Giant," *Fortune*, May 15, 1969, 293.

³⁰⁵ Tinstman and Peterson, *Iowa Beef Processors*, 8; House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 34; Milton D. Ratner, "The Role of Truck Transportation in Marketing Pre-Packaged Meats," *Refrigerated Transporter* (Feb. 1969): 14-7. See also Page, "Agro-Industrialization," 212-7; Horowitz, *Negro and White*, 249-51.

³⁰⁶ "Ready-Cut Meat," *BW*, Mar. 28, 1942, 48-9; House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 8; Page, "Agro-Industrialization," 213.

Urban wholesale and retail butchers were especially unwilling to allow the "logic" of boxed beef to unfold. Members of the powerful Amalgamated Meat Cutters union clearly understood that boxed beef would allow companies like IBP to transform butchering into a job for unskilled, unorganized, low-wage rural workers. Over the entire history of beef distribution, skilled butchers had played a central role in delivering meat to consumers. Even the introduction of "self service" meat departments in supermarkets in the late 1940s had not eliminated the need for a skilled butcher to make meat cuts attractive to customers.³⁰⁷ For instance, in 1948, the A. & P. store in Cambridge, Massachusetts, attempted to reduce wage costs for butchers by introducing automatic cutting machinery and hiring "wrapping girls" to do the weighing and pricing of cuts. The attempt failed when managers found that the workers were "still too green" and "the system [was] too new, to run at top efficiency."³⁰⁸ Boxed beef, on the other hand, required only one or two cuts from retail butchers, making jobs in meatcutting departments essentially "no different from stocking cans in the grocery section of the store."³⁰⁹ Realizing this, the Amalgamated Meat Cutters successfully allied with Teamsters to refuse to accept shipments of boxed beef at supermarket receiving docks in cities such as New York, Chicago, Milwaukee, and St. Louis.³¹⁰ Furthermore, even supermarket managers were not enthusiastic about boxed beef in 1969. Supermarkets had made significant capital investments in warehouses and deboning facilities in the 1940s and 1950s that boxed beef would make obsolete.³¹¹

IBP was committed to achieving control of beef distribution, however, and made every effort to break the resistance. First, IBP President Currier J. Holman broke into the lucrative New York market by paying bribes to union officials and providing secret rebates to supermarket meat buyers, a strategy that would land him in federal court on conspiracy

³⁰⁷ "Meat Prepackaging Soars," *BW*, Oct. 25, 1947, 62-6; Jane Nickerson, "Fresh Meat in Packages," *New York Times Magazine*, Aug. 15, 1948, 32-3; "Visible Meat," *BW*, Dec. 28, 1957, 109; Corey, *Meat and Man*, 161-3.

³⁰⁸ "Meat Prepackaging, A New Try," *BW*, Apr. 17, 1948, 56, 58-9.

³⁰⁹ William Burns, "Changing Corporate Structure and Technology in the Retail Food Industry," in *Labor and Technology: Union Responses to Changing Environments*, ed. Donald Kennedy, Charles Craypo, and Mary Lehman (University Park, PA: Department of Labor Studies, Pennsylvania State University, 1982), 41.

³¹⁰ Resistance remained the strongest in St. Louis, where boxed beef was not accepted until after 1981. Cook, "Those Simple Barefoot Boys from Iowa Beef," 35, 33.

³¹¹ House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 8; Page, "Agro-Industrialization," 216.

charges.³¹² But even more importantly, IBP cut the price of boxed beef so low that it simply became irresistible to supermarket managers, who realized that they could eliminate the jobs of skilled butchers who made \$2 to \$3 more per hour than the workers needed to package and stock boxed beef cuts.³¹³ By 1972, IBP had so many customers for boxed beef that it was making a profit of \$5 million a year on sales of over \$1 billion, despite the razor-thin profit margins required to keep the wholesale price attractive to retailers.³¹⁴ In the mid-1970s, boxed beef quickly became the standard method of distributing fresh meat for the new breed of packers; MBPXL built a boxed beef plant in Wichita in 1975, Monfort built one in Oakley, Kansas, in 1978, and by 1979 nearly 44 percent of beef was sold in boxed form.³¹⁵

Boxed beef, like dressed beef before it, required enormous investments to make the system work. Unlike the dressed beef packers, however, the new breed of meatpackers did not have to invest in an expensive distribution infrastructure of branch houses and railcars; boxed beef distribution required only a fleet of refrigerated trucks to deliver meat directly to the meat lockers of stores and institutions. However, the low prices demanded by cost-conscious consumers and supermarket managers forced boxed beef producers to price the new product so cheaply that only economies of enormous scale could produce profitability. Boxed beef producers built plants of unprecedented size that made the output of the Chicago factories of the original Beef Trust seem puny. The IBP plant opened near Garden City, Kansas in 1982 was officially publicized as having a daily slaughter capacity of 4,000 head, but in reality the number was closer to 5,500—a capacity so large that anyone familiar with the beefpacking industry at the time would have thought the directors of IBP "had lost their minds."³¹⁶ IBP's main competitors—MBPXL, Spencer, Monfort, and National Beef—were among the only companies able to secure enough capital to build the huge-capacity plants required to successfully market

³¹² "Iowa Beef Says Official May Face Indictment by a New York Jury: Case Would Involve Possible Fees Paid to Meat Broker in Fight with Union over Boxed Beef," *WSJ*, Mar. 12, 1973, 4; Lacey Fosburgh, "Big Meat Packer Accused of Bribes," *NYT*, Mar. 14, 1973, 1, 89; "Iowa Beef Officer Indicted by U.S., New York Juries," *WSJ*, Mar. 14, 1973, 4.

³¹³ Lawrence A. Duewer, "Cutting Beef-Handling Costs," *National Food Review* (Fall 1985): 2.

³¹⁴ House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 14. In fact, a former sales executive for IBP testified before this committee that IBP found ways to deliberately push the price of boxed beef below cost.

³¹⁵ "Beef Firm to Open \$10-Million Facility," *Wichita Eagle*, Mar. 17, 1975, Meat Industry Clippings, KSHS; "Firm Plans Beef Plant at Oakley," *Wichita Eagle*, Aug. 30, 1978, *ibid.*; Page, "Agro-Industrialization," 218.

³¹⁶ Earl Brookover, Jr., interview.

boxed beef.³¹⁷ For both smaller beefpacking firms and the old-line packers like Swift and Armour, the investments required to enter the boxed beef trade were prohibitively expensive. As a consequence of these barriers to entry, the number of meatpacking firms declined by 25 percent from 1970 to 1979, with most of the losses occurring among the smallest firms. Those smaller rural firms that survived, such as Dubuque and Hyplains, did so by selling carcasses to IBP to be boxed, becoming "captive firms" in the process.³¹⁸ In 1978, IBP alone slaughtered at least 16 percent of the nation's cattle—a remarkable share, since even Swift at the height of its power had probably never slaughtered more than 18 percent.³¹⁹ A new beef monopoly had arisen.

But this new monopoly never drew the sustained outrage of livestock producers or consumers that had made the issue of antitrust a long-term problem for the USDA. IBP brazenly announced its plans to dominate the beef industry; Director of Public Affairs Charles Harness announced in 1982 that IBP simply wanted "to make a buck. We think we have to grow to make a profit."³²⁰ The incredible growth of IBP and the other new breed of meatpackers was never seen as an issue of state concern by the administrators of the Packers and Stockyards Act, partly because of the low retail prices achieved by boxed beef distribution. Robert Peterson, who replaced Currier Holman as President of IBP following the bribery scandal, announced in 1981 that "the principal beneficiary of [boxed beef] is the consumer. The price of beef is still within the reach of the average consumer largely due to economy of scale."³²¹ Congressional Small Business committees investigated the growing monopoly power of IBP during the late 1970s and early 1980s, but as Representative Toby Roth of Wisconsin argued, "Looking at it through the housewife's view, I could care less about Iowa Beef."³²² Although the congressional investigations resulted in charges of "predatory pricing practices" by IBP in dumping boxed beef

³¹⁷ Page, "Agro-Industrialization," 218-9;

³¹⁸ Williams, *Changing Structure*, 15; House Committee on Small Business, *Small Business Problems in the Marketing of Meat and Other Commodities: Part 3, Concentration Trends in the Meat Industry, Hearings*, 96th Cong., 1st sess., May 1, 2, 14, Jun. 4, 1979, pp. 8, 35; House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 4, 33, 50; House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 11.

³¹⁹ Williams, *Changing Structure*, 52, 7.

³²⁰ Ray Hemman, "Kansas 'Beef Factory' on Display for Empire Days," *Hutchinson (Kansas) News*, Jun. 5, 1982, Meat Industry Clippings, KSHS.

³²¹ Tinstman and Peterson, *Iowa Beef Processors*, 12.

³²² House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 4, 42.

below cost on retail markets, the main concern that arose from the hearings was not with monopoly of beef marketing, but with the potential of the big packers to gain control of the nation's cattle supply.³²³

Livestock raisers, however, generally had few complaints about the monopsony power of IBP. When the firm opened its record-capacity plant near Garden City in 1982, Kansas cattlemen announced that they were "gleeful" to have such a large buyer in their backyard. IBP's insatiable demand for cattle allowed raisers and feeders near a plant to increase their production without fear of losing their market.³²⁴ IBP not only bought live cattle in steady volumes, but also tried to offer livestock producers higher prices than its competitors in order to maintain control of supplies. In 1981, the firm offered as much as \$20 more per head than other packer buyers.³²⁵ Representative Frederick Richmond of New York could thus sum up the lack of government concern about IBP's power: "If indeed the IBP can pay more for the cattle, which is good for the farmers, if they can deliver a more efficient box of boxed beef to the East, [then] the basic concept is good, isn't it?"³²⁶ Of course, not all cattle producers were exactly "gleeful" to have IBP dominate cattle buying; in 1976, Iowa livestock feeders filed a federal price-fixing suit against the firm in 1976, and others have done so since, although with little result.³²⁷ Furthermore, as a representative of the National Cattlemen's Association pointed out in 1980, even if a packer such as IBP cornered the livestock market in one particular region, livestock raisers could simply pay the trucking charges required to haul their cattle into another region with higher cattle prices.³²⁸

Without either consumer or producer protest, the issue of monopoly in beef production was no longer a significant state concern by the 1980s. The issues in the new beef industry that grabbed headlines were not primarily questions of political economy, but of environmental and food safety. Suburban residents in the vicinities of feedlots complained of groundwater and odor pollution, manure-laden dust, and piles of dead flies on their doorsteps, but state governments

³²³ Ibid., 41 and passim; Skaggs, *Prime Cut*, 194-5; Williams, *Changing Structure*, 86, 92, 149.

³²⁴ Lynn O'Shaughnessy, "Plants Welcomed by Kansas Cattlemen," *Kansas City Times*, May 12, 1982, Meat Industry Clippings, KSHS.

³²⁵ Cook, "Those Simple Barefoot Boys from Iowa Beef," 36.

³²⁶ House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 5, 69.

³²⁷ "Price Fixing in Meat Laid to Packers," *NYT*, Aug. 13, 1976, 78; "Lawsuit Claims IBP Cornered Market," *Garden City Telegram*, Dec. 29, 2001, 1, 2, Beefpacking Subject File, FCHS; Skaggs, *Prime Cut*, 193.

³²⁸ Bill Miller and Charles Henry, "What Happens When the Big Packer Comes to Your Town?" *Successful Farming*, May 1980, 18-21.

in the Feedlot Belt have generally refused to limit the growth of industrial cattle feeding.³²⁹ Feedlot operators have easily convinced state officials, eager to create economic growth, that the odors emanating from the yards are not the smell of manure, but "the smell of money."³³⁰ Meanwhile, academic social scientists seem to be the only people concerned about the difficult working conditions of rural meatpacking employees.³³¹ The USDA, meanwhile, found evidence of price-fixing in the packing industry after organizing a Meat Pricing Task Force in 1978-9, but requested that Congress not pass any legislation to deal with the issue, preferring instead to cajole packers through informal actions by the Packers and Stockyards Administration.³³² Monopoly had once again become a fact in the beef industry, but it was no longer a problem.

Asphalt Cowboys

Truck transportation underlay all of the political and economic machinations involved in the fall and subsequent rise of monopoly power in beef production in the twentieth century. Decentralized cattle marketing and direct beef distribution relied on trucks and good highways in the 1930s to 1950s, leading to the declining power of the Big Four in controlling prices in the industry. In the 1960s and 1970s, trucking ironically helped rebuild a new monopoly by allowing cattle producers to relocate and intensify cattle feeding, then by providing the equipment necessary to make boxed beef distribution possible. Trucking proved remarkably flexible both as a technology and as a means for a variety of economic interest groups to achieve their goals in the marketplace. At the heart of this flexible technopolitical machinery was the "bull hauler," immortalized as the "asphalt cowboy" in a country song performed by the appropriately named

³²⁹ "Wichitans Join War on Feedlot," *Wichita Eagle*, Jan. 8, 1966, Cattle Industry Clippings, KSHS; Jackie Hellstrom, "Potwin Residents Disturbed over Feedlot Location," *Wichita Beacon*, Apr. 25, 1969, *ibid.*; Robert Trosper to the Editor, "Neighbor Opposes Brookover Expansion," *Garden City Telegram*, Dec. 4, 1999, Feedlots Subject File, FCHS; *Dill v Excel Packing Co.*, 183 Kan. 513 (1958); Kansas Animal Health Department, *Livestock Feed Lot Laws and Regulations: Recommended Feed Lot Management Practices* (Topeka, KS: Robert R. Sanders, State Printer, 1971); Elizabeth Becker, "Feedlot Perils Outpace Regulation, Sierra Club Says," *NYT*, Aug. 13, 2002, 10.

³³⁰ Kathi Loper, "Pioneer Commercial Feed Yard Marks 25th Year," *Garden City Telegram*, Oct. 8, 1976, Beefpacking Subject File, FCHS.

³³¹ Fink, *Cutting into the Meatpacking Line*; Horowitz, *Negro and White*, part III; Lourdes Gouveia and Donald D. Stull, "Dances with Cows: Beefpacking's Impact on Garden City, Kansas, and Lexington, Nebraska," in *Any Way You Cut It*, ed. Donald D. Stull, Michael J. Broadway, and David Griffith (Lawrence: University Press of Kansas, 1995), 85-108.

³³² USDA Agricultural Marketing Service, Packers and Stockyards Program, *Beef Pricing Report* (Washington: GPO, 1978); House Committee on Small Business, *Small Business Problems in the Marketing of Meat*, part 3, 11, 13.

Sleepy LaBeef in 1970: "His engines are his horses, with an air conditioned seat / He can cross the desert now, and never feel the heat / He's a cowboy, he's a diesel dogging, truck driving, asphalt cowboy."³³³

The independence and strong work ethic of the "asphalt cowboy" was an important factor in making trucking a flexible form of transportation. From the beginning of large-scale beef production in the United States, the most essential factor shaping the industry was the problem of gathering cattle from widely distributed ranches and farms and moving them to consumers without losing profits due to shrinkage, bruising, or early death. The movement of cattle always relied on relatively skilled laborers capable of transporting the animals safely; whether actual cowboys, railroad stock handlers, or eventually truckers. But finding workers willing to put up with the stench and the demanding work required to convince stubborn cattle to take long rides was not always easy. As a consequence, the average bull hauler in the twentieth century was usually a beginning trucker, someone who took the job as an entry-level position on the way up the trucking ladder to hauling cleaner, more respectable loads. As one experienced cattle trucker put it, "other truckers ... think that we are the most stupid, stinking, sons-a-bitches on the road" and preferred not to have to park next to cattle trailers at truck stops.³³⁴ But for a bull hauler willing to work hard, long hours providing quality service to livestock shippers, relatively decent money could be made; in the early 1970s, a Nebraska trucker earned up to \$1 per mile for cattle hauls.³³⁵ But money alone did not define the experience of the bull hauler. Instead, a sense of rugged independence permeated the culture of cattle truckers, often explicitly understood as a modern-day invocation of the idealized cowboy life of the Old West. It was this independence that livestock shippers and meatpackers encouraged and exploited in the twentieth century to gain market power in the beef industry.

As in the case of milk, cattle trucking began in earnest in the 1920s with farmers using their own pickup trucks to deliver loads to local markets. For instance, Sam C. Ludwig of Florence, Kansas, bought his first Ford Model T truck in 1922, which he remembered as having

³³³ Clark Bentley and Lawton Williams, "Asphalt Cowboy" (BMI / Shelby Singleton / Western Hills), recorded by Sleepy LaBeef, Plantation Records 66 (1970).

³³⁴ Stan Holtzman, "The 'Bull Hauler': 'Other Drivers Call Us Stupid'," *Overdrive* (Jul. 1965): 42.

³³⁵ "The Livestock Hauler: 20th Century Trail Boss," *Overdrive* (Feb. 1972): 123.

"a capacity of two big cows or three small ones." A decade later, Ludwig had a bigger truck and regularly hauled livestock to market for himself and his neighbors, although he continued to farm.³³⁶ This remained a common pattern in the 1930s; although more and more cattle moved to market via truck, relatively few truckers specialized in hauling animals. Ted Berger, of Jetmore, Kansas, began hauling livestock in the 1930s but also ran a farm, operated an automobile repair shop, and hauled grapefruit from Florida.³³⁷ By the late 1930s, many young men fed up with the difficult life of farming during the Depression began looking for a career that would provide a steady income, but still allow them to maintain a sense of "working for one's self" as they believed farming was supposed to do. Trucking was becoming an increasingly important means of moving cattle to market, and so drivers were in demand; the decision to haul cattle seemed obvious to many would-be farmers who knew they could stand the smell and hard work of bull hauling.³³⁸ This trend picked up during and immediately after World War II, as farmers and the sons of farmers found high land prices making agriculture an increasingly difficult business in which to maintain any sense of economic independence. Cattle trucking, on the other hand, required only a relatively small investment in a good truck to get a decent income without being tied to a factory line or a desk job. In fact, most bull hauling operations have historically been very small companies where the owners are also drivers and have quite small fleets. For instance, Wayne Barnett of Moran, Kansas, began as a livestock trucker by buying a used straight truck in 1945, and had just three tractor-trailers fifteen years later. But if his business was not big, "Mr. Barnett likes being in business for himself. He is an individualist who just wouldn't be happy working for someone else."³³⁹ Of course, some livestock haulers were able to grow quite large by reinvesting earnings into new trucks, but even one of the largest firms, headed by Vernon Carlisle in the Texas Panhandle, had only 24 tractor-trailers in 1977.³⁴⁰ Cattle trucking was an important business, but it was never big business; few truckers would

³³⁶ Donna Hobbs, "It All Started with a Model T," *Kansas Transporter* (Sep. 1962): 6-7. See also Dorothy Kelley, "Decatur County Feedlot 50 Years Old," *Wichita Eagle*, Sep. 3, 1970, Cattle Industry Clippings, KSHS.

³³⁷ "Livestock Carriers Die in Accident," *Kansas Transporter* (Oct. 1956): 29

³³⁸ Robert Vandivier, interview by the author, Nov. 22, 2003, Lebanon, IN; "Bill Graves Began with One Truck," *Kansas Transporter* (Jan. 1947): 3, 14; "Bill Graves Heads Kansas Truckers," *Power Wagon* (Feb. 1947): 28; Doris Quinn, "Pappy Is Happy about Being a Bull Hauler," *Kansas Transporter* (Dec. 1959): 6-7.

³³⁹ Doris Quinn, "In the Shadow of a Steer," *Kansas Transporter* (Sep. 1960): 6-7. See also Doris Quinn, "A New Breed," *Kansas Transporter* (Jun. 1961): 4-5.

³⁴⁰ "Carlisle Moves Fat and Feeder Cattle," *Ag Trucking News*, Mar. 1977, 68.

have been willing to both be required to work a hard, stinky job and also have to do so for the benefit of an absentee owner of a large corporation.

Part of the reason for this deeply felt sense of independence among cattle haulers was the widespread recognition that the job demanded impressive skills. Driving the truck was the easy part; the owner of one livestock hauling firm believed that he "could teach any idiot how to drive a truck," but finding drivers who also knew how to properly load and care for animals was a great deal more difficult.³⁴¹ The bull hauler who believed that other drivers thought of his ilk as "stinking sons-a-bitches" defended his chosen line of work as more skilled than that of general freight haulers, since "hauling the big brutes is actually a delicate task [because] the animals bruise easily."³⁴² Bruising made for unsaleable meat and was not kindly accepted by either farmers or packers who stood to lose money when truckers drove too fast, stopped too quickly, turned too sharply, or packed the cattle too tightly into a trailer.³⁴³ Successful cattle hauling firms, such as Horadam Brothers in southern Texas, hired only drivers who could prove they had "a certain amount of restraint and cattle psychology" that would allow them to load and transport the animals without causing stress that would result in restless, bruised cattle.³⁴⁴ The "twentieth century trail boss" needed to keep as close an eye on his dogies as the cowboy of yore.³⁴⁵

Although Sleepy LaBeef sang with tongue firmly planted in cheek about the "asphalt cowboy" and his "air-conditioned seat," many cattle haulers believed themselves to be direct reincarnations of the Old West drovers. Floyd P. Mounkes of Emporia, Kansas, wore cowboy boots and a fine hat while "stand[ing] tall in the saddle" of a "modern highway truck which efficiently and economically transports a rancher's cattle to the market of his choice."³⁴⁶ But while the modern bull hauler moved cattle more quickly than the drovers of the Chisholm Trail, notions of efficiency and economy took a backseat to ideals of proper manhood. This was most

³⁴¹ Robert Vandivier interview.

³⁴² Holtzman, "The 'Bull Hauler'," 44.

³⁴³ "'5 Major Things to Watch' in Every Livestock Haul," *Kansas Transporter* (Feb. 1948): 14, 21; "Handle Stock Properly to Reduce Bruising," *Kansas Transporter* (Jul. 1954): 23.

³⁴⁴ Ray E. Maher, "Moving Beef on the Hoof Is Horadam's Job," *Power Wagon* (May 1948): 22-3.

³⁴⁵ "Livestock Hauler: 20th Century Trail Boss," 118.

³⁴⁶ Donna Hobbs, "Business Surrounded by Atmosphere of the 'Old West'," *Kansas Transporter* (Jul. 1962): 6-8. See also "Mounkes Truck Line Builds Outstanding Safety Record," *Kansas Transporter* (Mar. 1970): 10.

evident in the cattle hauler's preference for powerful trucks. C. R. Ballstadt, for instance, began hauling cattle in Iowa in 1933 with a Model T pulling a four-wheeled trailer, but by 1970 had assembled a small fleet of giant rigs, including a Kenworth, two Peterbilts, and three International Harvesters. Although high-horsepower engines were not particularly necessary for the job, Ballstadt had 335hp Cummins diesels installed in the Peterbilts and Kenworth, earning him a highly coveted photo spread in *Overdrive* magazine.³⁴⁷ Cattle truckers who traveled any distance over a few hundred miles used the length of their trips to justify the purchase of big diesel rigs, rather than gasoline straight trucks, in the 1940s and 1950s; again, the size and power was not necessary to get the job done, but a big manly truck made the job worth doing.³⁴⁸ The culture of cattle hauling was permeated by a sense of independent manhood, defiantly upheld in an era of big business, big government, big labor unions, and, of course, big meatpackers.

Truckers who considered themselves independent were, however, deeply embedded in a web of regulatory structures and capitalist machinery. Both livestock producers and meatpackers came to depend on truckers to operate a flexible transportation system that would allow them to increase their control over beef marketing in the twentieth century. The technology of trucking provided a certain inherent flexibility, since a big rig could travel down a ranch's dirt path almost as easily as it could on an interstate highway. But neither this physical freedom of motion nor the bull haulers' culture of manly independence was enough to guarantee that trucking would provide the various economic interest groups in the beef industry with the power they wanted. Instead, farmers and packers encouraged flexibility through subtle manipulations of state power.

First, livestock hauling was exempt from federal rate and market entry regulation, as described in Chapter 1. The politics of livestock hauling in the state of Kansas offer useful insights into the importance of the federal exemption, because Kansas was one of the few states to regulate the industry. This was done through the Kansas Corporation Commission (KCC), a bipartisan regulatory body originally founded in 1911 in response to populist anger at railroad

³⁴⁷ "Small Fleet of the Month," *Overdrive* (Apr. 1970): 84.

³⁴⁸ Tim Heerdt, "Hauling Livestock, A Boy's Perspective," *Wheels of Time*, Mar. 2004, 25.

rates.³⁴⁹ Although the KCC maintained a close watch over trucking rates beginning in the 1930s, it did allow farmers who hauled their own or their neighbors' cattle directly to market to do so without registering for a permit or filing their freight rates with the state. This exemption caused tensions between cattle raisers and regulated freight truckers, since Kansas farmers would have greatly preferred to have cattle hauling in their state be unregulated as it was in most other states.³⁵⁰ The Livestock Feeders' Association of Whitewater, Kansas, passed a resolution in 1940 blaming the KCC for making it "next to prohibitive to truck cattle from Texas to Kansas," forcing them to rely on slower, more expensive rail shipping.³⁵¹ Kansas cattlemen did not merely complain about the KCC; they also regularly gave their business to truckers who did not have KCC hauling authority. In 1950, truckers who had received proper authority from the KCC began a two-decades long effort, spearheaded by the Kansas Motor Carriers Association, to combat the increasing prevalence of these "bandit truckers" who were "running scott-free" and creating "complete chaos" by not paying the appropriate state licensing fees and ton-mile taxes.³⁵² Where the KCC and Kansas Motor Carrier Association saw "chaos," cattle producers saw opportunities for cheaper, faster shipping of their cattle to market, and so found ways to avoid the very regulations that their populist forebears had demanded for railroads. Kansas cattlemen might have envied their competitors in the state of Georgia, where farmers could rely on an unregulated livestock trucking industry in which competition was so fierce that truckers had to scramble to make enough money to pay for their equipment and fuel.³⁵³

Most of the nation's cattle producers relied on the flexibility of unregulated trucking services, and so lobbied Congress and the USDA to keep the federal exemption in effect from the 1930s to the 1970s. (Chapter 1) But while the USDA's agricultural economists officially approved of the agricultural exemption, some realized that the flexibility it entailed might add

³⁴⁹ "KCC History Goes back to March 1883," *Wichita Eagle*, Nov. 8, 1976, Motor Carrier Industry Clippings, KSHS; "A Real Job as the Corporation Body Shifts to New Quarters," *Topeka (Kansas) State Journal*, Aug. 15, 1941, *ibid.*; Ted Blankenship, "KCC Isn't Just Another State Board," *Wichita Eagle*, Nov. 7, 1976, *ibid.*

³⁵⁰ L. A. Hoffman, P. P. Boles, and T. Q. Hutchinson, *Livestock Trucking Services: Quality, Adequacy, and Shipment Patterns* (Washington: USDA, Economic Research Service, 1975), ii.

³⁵¹ "Livestock Feeders Pass Important Resolution," *Motor Carrier* (May 1940): 11.

³⁵² "Farm-to-Market Carriers Wage War on Violators," *Kansas Transporter* (Aug. 1950): 20-1; John Harvey, "What Good Are Ports of Entry?" *Kansas Farmer*, Jan. 20, 1951, 10.

³⁵³ "Adequate Rates Major Problem Facing Bull Haulers," *Ag Trucking News*, Jun. 1973, 32.

unnecessary costs to the marketing of beef cattle.³⁵⁴ Truckers in a highly competitive marketplace gained business not so much by lowering their rates, but by offering improved service to shippers. This meant, for instance, that a trucker would travel directly to a farm or a feedlot immediately when a cattleman called, even if this meant the trucker had to go significantly out of his way to get there.³⁵⁵ Furthermore, although trucks arriving directly on farms allowed cattle to move shorter distances on the hoof to get from a pasture to a feedlot to a packinghouse, each of these separate movements along the highway could quickly add up. As one cattle hauler noted in 1965, "it isn't unusual for us to haul the same cattle four or five times."³⁵⁶ Furthermore, the flexibility provided by small fleets of trucks able to arrive at any shipping point at a moment's notice also meant that trucking firms could not practice economies of scale as more tightly integrated railroads or larger trucking firms could. Fuel could not be purchased at volume discounts, centralized repair departments were not possible, and traffic could not be dispatched in systematic fashion to reduce unit costs.³⁵⁷ The cattle producer's demand for a flexible transportation system was not the product of an abstract ideal of economic efficiency, but of a desire to use transportation networks to increase his ability to attain a desirable price for his cattle by selling them where and when he wished.

Meatpacking firms likewise relied on truckers to increase their control over the terms of cattle and meat pricing. The new breed of meatpackers such as IBP proved particularly intent upon buying cattle less than 24 hours in advance of slaughter, in an effort to minimize the weight loss of animals as they left the feedlot.³⁵⁸ This just-in-time supply chain could only work if truckers were willing and able to send trucks wherever and whenever the packer wanted them.³⁵⁹ On the meat distribution end, meatpackers also needed trucks to be able to travel anywhere. In the era of rail-based branch house distribution, packers had moved fresh beef to small towns and cities by relying on a combination of railcars, cold-storage warehouses, and

³⁵⁴ J. C. Winter to Charles B. Bowling, "Livestock Transportation Charges," Feb. 28, 1955, RG 136, Entry 42, Box 2, Folder 2.

³⁵⁵ Abdou, "Economic Aspects," 964.

³⁵⁶ "Hauling as Many as 2900 Cattle a Day," *Kansas Transporter* (Apr. 1965): 4.

³⁵⁷ "Winrock Farms," *Ag Trucking News*, May 1973, 14-5.

³⁵⁸ Dirck Steimel and Angelia Herrin, "Wichita's Meatpacking Era Draws to Close," *Wichita Eagle*, May 15, 1983, Meat Industry Clippings, KSHS.

³⁵⁹ Judy Henry, "Beef Plants Operate on Low Profit Margin," *Topeka (Kansas) State Journal*, May 10, 1973, Meat Industry Clippings, KSHS.

small delivery trucks; but in an era of giant supermarkets widely distributed in suburban shopping centers, tractor-trailers were the only machines capable of delivering in volume to geographically diffuse customers. In particular, with the advent of boxed beef, it became necessary for IBP to ship directly to supermarket loading docks rather than to central warehouses. Truckers hauling boxed beef might have to make multiple daily stops across a broad territory to dispose of a full trailer load of meat.³⁶⁰ Even if one particular retail store called in a large meat order, the meatpackers needed truckers to be flexible. This was because no beef carcass was ever exactly like another, even in the age of scientific breeding and feeding, so if a supermarket demanded an entire load of beef matching its precise specifications, the packer might have to assemble the order by bringing in carcasses from other plants. This assembly had to occur within a matter of hours to satisfy the large-volume supermarket customer, and so truckers might be called upon to drive from Kansas to Nebraska to Iowa with little advance warning.³⁶¹ Modern beefpacking was a fast-paced industry, demanding instant delivery of both raw materials and finished products; only truckers traveling on good roads could fulfill such expectations.

Meatpackers relied on the independent streak of highway haulers to achieve their business goals. This became especially apparent during a strike at IBP's Dakota City plant in 1969, when the Amalgamated Meatcutters Union convinced the Teamsters Union to refuse to accept loads of boxed beef bound for New York City. IBP responded by convincing the Interstate Commerce Commission to grant "emergency temporary authorities" to non-union independent truckers, and eventually got the meat through.³⁶² Following this episode, IBP sought a more permanent solution by helping independent truckers gain ICC authority to compete with the unionized haulers. The firms' distribution manager described this effort in a transportation trade journal as "a quest for new blood," perhaps unintentionally evoking Karl Marx's image of capitalists as vampires sucking the very life out of workers.³⁶³ But if truckers had become cogs in

³⁶⁰ Starr H. Lloyd, "Food Distribution: A Study in Beef," *Transportation and Distribution Management* 12 (Sep. 1972): 21; "Amarillo's IBP: Where Beef Is King," *Ag Trucking News*, Mar. 1977, 18.

³⁶¹ Lloyd, "Food Distribution: A Study in Beef," 23-4.

³⁶² *Ibid.*, 21. Unlike cattle haulers, truckers hauling processed meat carcasses needed ICC authority to operate across state lines; see Chapter 1.

³⁶³ *Ibid.*, 23; Karl Marx, *Capital: A Critique of Political Economy*, Vol. 1 (New York: Vintage, 1977 [1867]), 342.

the capitalist machinery of modern beefpacking, to call the beef hauler a subject of exploitation or a victim of "false consciousness" would be oversimplification. For one thing, drivers of boxed beef reefers considered themselves to be near the top of the truck driving totem pole; reefers came in just below petroleum and liquid hazmat tankers as the equipment most envied by other truckers.³⁶⁴ Furthermore, not every new-breed meatpacker tasted blood at the sight of an independent trucker. Monfort, for instance, bought its own fleet of fifty brand-new Kenworths with sleeper cabs in 1970 with the explicit intention of attracting good drivers who appreciated fine equipment.³⁶⁵ Monfort understood that some truck drivers might be willing to work for slightly less money if they had access to a manly rig like a Kenworth conventional (i.e., a truck with an extended nose, as opposed to the flat-fronted cabover design). We will return to this issue in Chapter 5, but first we turn to frozen food, another industry in which expensive trucking equipment and skilled truck drivers lay at the heart of a marketing machine that brought new economic structures to the postwar countryside.

³⁶⁴ Lawrence J. Ouellet, *Pedal to the Metal: The Work Lives of Truckers* (Philadelphia: Temple University Press, 1994), 192; John McPhee, "A Fleet of One," *New Yorker*, Feb. 17, 2003, 148-63.

³⁶⁵ "Private Fleet Cuts Delivery Time, Cargo Losses for Monfort of Colorado," *Ag Trucking News*, Sep. 1973, 6.

Chapter 4: The Flexibility of Frozen Food

In January 1955, *Life* magazine published a photo spread on Seabrook Farms of New Jersey, calling it the "Biggest Vegetable Factory on Earth." The article sought to show *Life*'s readers how frozen vegetables started life on an industrial farm and ended up in suburban home freezers. The photo essay celebrated Seabrook's mass production system in triumphant terms, depicting the factory farm's use of the latest technologies and praising the quality of the resulting product. For readers of *Life*, many of whom were new inhabitants of the booming postwar American suburbs, the essay captured the miraculous nature of the new food economy. Food processors like Nabisco had pioneered the packaging of cereals decades before, replacing anonymous barrels with branded boxes. But the postwar food economy brought *vegetables* in a box, processed at a mega-scale industrial plant, and delivered at low prices with guarantees of uniformity and "freshness" via self-serve supermarket shelves. Vegetables had once traveled to consumers either unprocessed or processed to the point of tastelessness; now they flowed through Ford-style assembly lines, but still emerged with their flavor and color preserved by freezers and plastic wraps.¹

The *Life* article merely summarized two and a half decades of extravagant promises for frozen food. During its early years in the 1930s, frozen food was touted as a way for private industry to harness science and technology, achieving rationalized food production and marketing to rival that achieved in the automobile industry. In reality, the science and technology of freezing proved rather more difficult, requiring a decade of experimentation by processors, food technologists, and farmers. By the onset of World War II, frozen food packers had developed impressive systems for mass production but had not yet cultivated a mass market. Through the war, frozen food gained in popularity due to rationing of canned produce, justifying continued efforts to make frozen food available to the masses as a low-cost, high-quality product. The postwar expansion of long-haul trucking and the availability of new refrigeration technologies finally made low-cost mass distribution possible in the early 1950s. Prior to this point, frozen food was not embroiled in farm or food politics in the manner of milk

¹ "Biggest Vegetable Factory on Earth," *Life*, Jan. 1955, 40-3.

or beef, but the successes of mass marketing in the 1950s gave frozen food a powerful political valence. Agricultural economists and policymakers in the period increasingly came to see frozen food as an ideal, non-statist solution to surplus problems in the fresh produce economy. The technology needed to achieve both the political and economic promises of frozen food, however, soon proved so complex and expensive that both goals could not be achieved simultaneously. By the mid-1960s, frozen food was no longer touted as an agro-industrial revolution, becoming instead merely an ordinary product of profit-oriented corporate capitalism.

"A Remarkably Perfect Piece of Merchandise"

An entirely new food processing industry arrived on the American scene—or at least in Springfield, Massachusetts—on March 8, 1930. Ten grocery stores in that city received the first shipments of frozen meats, seafood, fruits, and vegetables from Birds Eye Frosted Foods, a subsidiary of the General Foods Corporation. For two weeks, thousands of curious customers crowded the Springfield stores, where salesmen perched behind glass-topped freezer cases touted the packages within as the "Most Revolutionary Idea in the History of Food." Enough Springfield consumers bought into the avowedly experimental concept, encouraging Birds Eye to expand its distribution over the next year to retail stores in 30 cities throughout New England. In August, 1931, Birds Eye products debuted in New York City at Wanamaker's department stores. Within just seven years, Birds Eye frozen food could be purchased in over 3,000 retail and wholesale outlets in 45 states.²

Defying the general economic mood of the Great Depression, Birds Eye's experiment brought a sense of optimism to the food economy in the early 1930s. In contrast to the bitter political strife besetting the milk and beef industries at the time, the introduction of frozen food promised a mass-production food economy unencumbered by the politics of the past. Hope ran especially high among business leaders in the food processing industry convinced of untapped

² "Birdseye Products Sales Are Pushed," *Wall Street Journal* (hereafter *WSJ*), Mar. 26, 1930, 23; *Rewriting the Menus of the World: The Story of the Most Revolutionary Idea in the History of Food* (Boston: Birds Eye Packing Company, 1931); "General Foods Service: Quick-Frozen Food Distribution Extended to 30 Eastern Cities and Towns," *WSJ*, Jun. 24, 1931, 13; "Quick Frozen Food Products Introduced in New York at Wanamaker's," *WSJ*, Aug. 27, 1931, 3; H. J. O'Brien, "Frosted Foods Sales Show Sharp Gain For Past Year," *WSJ*, Jan. 31, 1938, 1.

markets and unprecedented profits; among food technologists thrilled by the chance to craft new processes and devices to prevent the decay of flesh and fiber; and among industrial-style farmers assured that freezing technology could tame the unpredictable nature of growing and selling perishable produce. Through the 1930s, these three optimistic groups cooperated in an effort to turn their hopes for the new product into reality. Despite successes in refining the techniques of mass production by the end of the decade, however, the promoters of frozen food proved unable to cultivate a mass market for their goods. After World War II, the frozen food industry would play an important part in reshaping the nation's food and farm politics, but for its first two decades the industry was defined primarily by experimentation and unrealized economic hopes.

The great fanfare surrounding the introduction of frozen food in the 1930s included a heroic myth of origin that celebrated Clarence Birdseye as the "Father of Frozen Food." The standard narrative, reproduced and refined over the years in advertisements and popular periodicals, began in Labrador in 1915 where Birdseye was either (depending on the storyteller's fancy) a trapper and taxidermist or a wildlife observer for the U.S. Biological Survey. Supposedly Birdseye happened to leave a thin strip of meat outside on a particularly chilly arctic winter night, and later upon thawing the meat found its texture and taste remarkably well preserved. The event, Birdseye would later claim, led him to the idea of quick-freezing—applying extremely low temperatures to food very quickly to "lock in" texture, moisture, and flavor. Or, as one typical version of the narrative put it: "As this scientist mushed with his dog team across barren wastes, as he faced shrieking blizzards and still, frozen nights ... he came to realize that cold—intense, sub-zero cold—can be a wonderful preserver of life."³ Birdseye was not, however, the first person to think of quick-freezing foods. For many years prior to Birdseye's trip to Labrador, the North Alaska Coast Inuit had dug ice cellars into permafrost to store whale meat through the summer and fall, while the Saint Lawrence Island Inuit placed the succulent roseroot in sealskin

³ *Rewriting the Menus of the World*, 1. For an only slightly less hyperbolic version, see "The Birds Eye Story," *Quick Frozen Foods* (hereafter *QFF*) (Sep. 1954): 55-6. Clippings from newspapers and magazines that perpetuated the myth can be found in the Harden Franklin Taylor Papers, Cornell University Library, Division of Rare and Manuscript Collections, Ithaca, NY, Box 1 (hereafter H. F. Taylor Papers).

icepacks to preserve its leaves for seasoning winter meals.⁴ Furthermore, Birdseye's successful application of the quick-freezing concept did not come until the late 1920s, following a series of failed efforts to ship New England fish fillets packed in ice to Midwestern markets. After multiple instances of disastrous spoilage, Birdseye asked for advice from Harden F. Taylor, who as Chief Technologist at the U.S. Bureau of Fisheries had experimented with freezing fish for several years. Taylor pointed Birdseye to a series of published papers by Scandinavian and German scientists who had experimented with brine-immersion freezing techniques in the 1910s, predating Birdseye's efforts by a decade.⁵

Clarence Birdseye did not invent frozen food, but he did play a crucial role in developing the technologies and business connections that made mass production commercially feasible. Birdseye's most important innovation was the idea of freezing food items inside consumer-sized packages, rather than freezing them through bulk immersion. In essence, Birdseye reconceptualized the use of low temperatures as a food preservation technique. Immersion in brine imparted new (and often undesired) flavors and textures to foods by allowing salt particles to penetrate the flesh of the organism. Freezing the food inside a sealed package, however, made it theoretically possible to preserve the flavor and texture of the original. Birdseye turned this concept into reality in the mid-1920s in a small laboratory in Gloucester, Massachusetts, where he constructed and later patented a machine capable of quickly freezing packaged foods (**see Figure 4.1**). Birdseye's twenty-ton machine conveyed thin, block-shaped, tightly sealed food packages between two endless metal belts. The belts, refrigerated by a constant spray of calcium chloride solution held at -45°F, rapidly absorbed the heat from the food with neither air, liquid, nor metal ever coming into contact with the food inside.⁶ Importantly, Birdseye received a patent not for the machine itself, but for the process it represented—that is, the idea of freezing

⁴ Robert F. Spencer, "North Alaska Coast Eskimo," and Charles C. Hughes, "Saint Lawrence Island Eskimo," in *Handbook of North American Indians, Vol. 5: Arctic*, ed. David Damas (Washington: Smithsonian Institution Press, 1984), 330, 272.

⁵ Harden F. Taylor, Transcript of Interview by Gould P. Colman, Oct. 12, 1965, New York, New York, Food Processing Industry, New York State, Oral History Interviews, Cornell University Library, Division of Rare and Manuscript Collections, Ithaca, NY, Transcript 1217, 18-9, 27-8; L. V. Burton to J. F. Thomas, Jun. 25, 1962, H.F. Taylor Papers, Box 1, Folder 1; Harden F. Taylor to William G. Wing (*New York Herald Tribune*), Mar. 29, 1961, *ibid.* For more details on the early history of the frozen food business, see Mark W. Wilde, "Industrialization of Food Processing in the United States, 1860-1960" (Ph.D. diss., University of Delaware, 1988), 201-17.

⁶ Clarence Birdseye, "Method of Preparing Food Products," United States Patent No. 1,773,079, Aug. 12, 1930.

food as a consumer package. Within just a few years after Birdseye filed his patent in 1927, the machine itself was obsolete, having been superseded by equipment capable of freezing much larger quantities of foods more quickly.⁷ Furthermore, Birdseye was a far better inventor than businessman. The company he formed in 1924 to commercialize the technology, General Seafoods (later renamed General Foods Company), lost hundreds of thousands of dollars in the five years of its existence.⁸

⁷ These included the multiplate freezer method developed by General Foods in 1934, which froze many packages simultaneously in hollow metal plates filled with refrigerant; improved methods of brine or sugar syrup immersion for freezing vegetables and fruits in bulk; and air-blast tunnels and brine-fog tunnels which worked by exposing packages of food to extremely cold vapors. See "The Birds Eye Story," 85, 87; Donald K. Tressler, "The Freezing Process," *QFF* (Jun. 1963): 34-6; Harry Carlton, *The Frozen Food Industry* (Knoxville: University of Tennessee Press, 1941), 121-9.

⁸ Wilde, "Industrialization," 215-9; "Birds Eye Story," 56.

Aug. 12, 1930.

C. BIRDSEYE

1,773,079

METHOD OF PREPARING FOOD PRODUCT:

Filed June 18, 1927

5 Sheets-Sheet 1

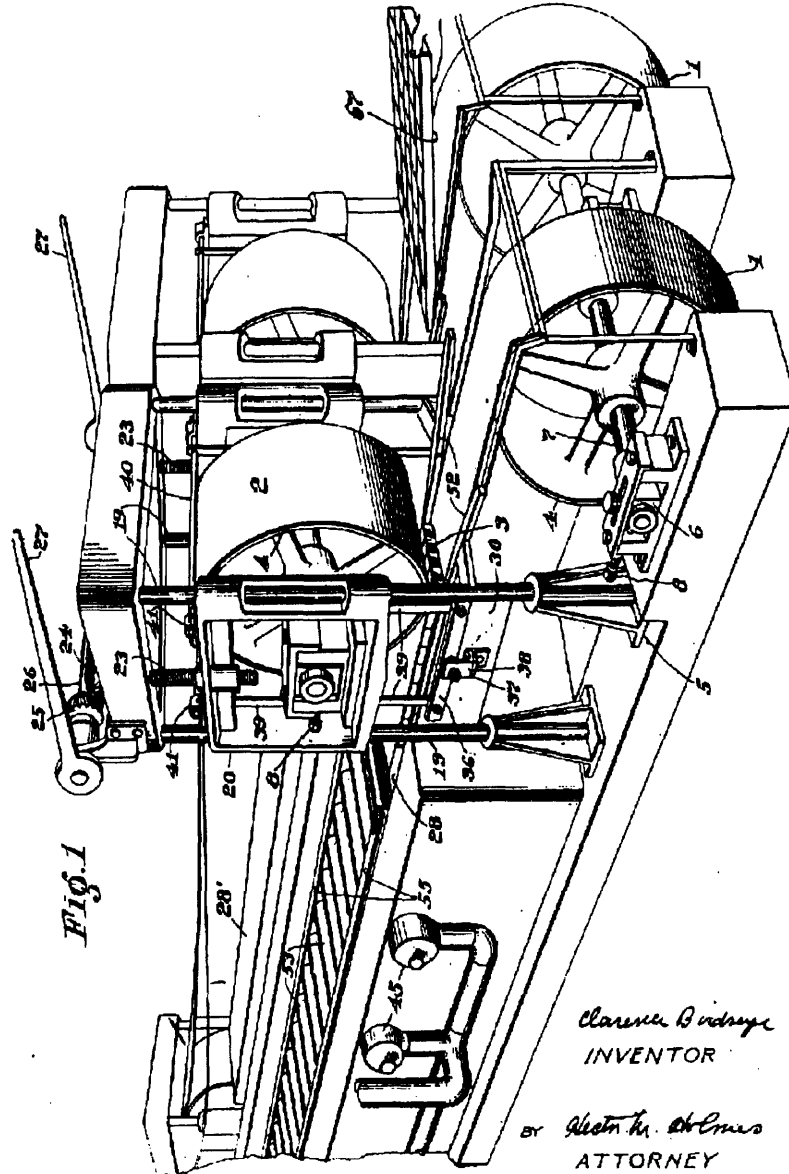


Figure 4.1: Clarence Birdseye's 20-ton belt freezer

Clarence Birdseye's machine made it possible to freeze consumer-sized packages of food, though within a few years the monstrosity would be replaced by more efficient devices. Clarence Birdseye, "Method of Preparing Food Products," United States Patent No. 1,773,079, Aug. 12, 1930.

Birdseye became the "Father of Frozen Food," not because of his belt freezer or his business skills, but because he was able to convince better businessmen that his patented food preservation technique had revolutionary commercial potential. Those better businessmen were the managers of the Postum Company, the firm famous for mass marketing breakfast cereals such as Grape-Nuts and Post Toasties, as well as Maxwell House Instant Coffee, Jell-O, Swans Down Cake Mix, and a host of other nationally recognized brand names.⁹ Birdseye approached the Postum Company in early 1929, seeking an infusion of capital for his failing General Foods Company. Postum executives Edward F. Hutton and Colby M. Chester responded by not only offering General Foods \$1.5 million in working capital, but also, with the help of Goldman Sachs Trading Company, engineered an outright purchase of the firm's \$2 million in assets and Birdseye's patents and trademarks for \$22 million. Within the year, Postum had adopted the name of its latest acquisition (adding "Corporation" to the end of "General Foods") and created a well-funded subsidiary to market Birds Eye Frosted Foods.¹⁰

Given the utter failure of Birdseye to make a profit on his patented process over the previous half decade, the payment of \$22 million for a firm with only \$2 million in assets may seem surprising. But the managers of the firm that had introduced Americans to breakfast cereal saw in Birdseye's frozen-food concept a similar potential to create an entirely new market—to make big profits on high-volume sales of a branded, nationally distributed, and heavily advertised food product that had not previously existed. Birds Eye Frosted Foods promised to go one step further in this respect than even the remarkably successful Grape-Nuts and Post Toasties. As with the milling and dehydrating involved in cereal production, quick freezing converted a perishable food into a storable, packaged (and therefore brand-able) commodity.¹¹ Unlike cereal processing, however, the manufacture of frozen food under the Birdseye process would not substantially change the form of the food; a frozen fish fillet would still be a fillet, not a fish flake or fish powder.

⁹ "Let Them Eat Cake," *Fortune*, Oct. 1934, 69-70; James L. Ferguson, *General Foods Corporation: A Chronicle of Consumer Satisfaction* (New York: Newcomen Society, 1985), 16; Harvey Levenstein, *Revolution at the Table: The Transformation of the American Diet* (New York: Oxford University Press, 1988), 33-5.

¹⁰ "Let Them Eat Cake," 69, 124, 135, 137; Wilde, "Industrialization," 219-24.

¹¹ On the importance of packaging and branding in the history of mass marketing, see Susan Strasser, *Satisfaction Guaranteed: The Making of the American Mass Market* (New York: Basic Books, 1989).

Understanding the science behind quick freezing helps make clear why General Foods Corporation invested so heavily in an unproven processing technique in 1929. Two factors are primarily responsible for the deterioration of any perishable food product: a) growth of microorganisms (bacteria, yeast, and mold) causing flavor changes, and b) enzymatic activity and chemical reactions that alter food color, texture, and taste. Prior to the invention of quick freezing, canning was the most technologically advanced method used to stop these processes of deterioration.¹² Applying heat to foods and hermetically sealing them in tin, canners killed microorganisms and cut off the air needed for most chemical reactions to occur, thus allowing long-term storage of the product. Despite the consequent advantages for mass distribution, the use of high temperatures and brine solutions radically altered the texture and flavor of the food.¹³ Quick freezing, as conceived by food technologists in the 1920s and 1930s, could slow microorganism growth and enzymatic activity nearly as well as canning, but without significantly altering the original food.¹⁴ This was especially true if processors subjected the food to temperatures well below 32° F (the freezing point of water). Rapid cooling to temperatures in the range of -15° to 0° F helped prevent the formation of large ice crystals—which could draw water from within and around the organism's cells and lead to wilting, mushiness, or oozing upon thawing.¹⁵

Achieving such low temperatures required expensive refrigeration machinery, making freezing far less cost-effective than canning in the 1930s. The cost seemed moot, however, for foods that were highly seasonal and highly perishable in nature, and for which Americans had

¹² Smoking, salting, pickling, and drying were among the oldest and most common forms of food preservation; all of these used a combination of heat and/or chemicals to prevent deterioration, but at the cost of fundamentally changing the flavor and texture of the original food. For many foods, such as cured hams or pickled herring, these changes were desirable; but for others, particularly beef and many fruits and vegetables, such methods of preservation were not culturally acceptable. Refrigeration—also an ageless method—had the significant advantage of maintaining much of the flavor and texture of the original, but it was less effective at slowing the growth of microorganisms and the pace of enzymatic reactions over a long period of time.

¹³ Mildred Boggs and Clyde Rasmussen, "Modern Food Processing," in USDA, *Yearbook of Agriculture*, 1959 (Washington: GPO, 1959), 419. On the history of the canning industry, see Wilde, "Industrialization," 28-69; Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Harvard University Press, 1977), 295-6.

¹⁴ Freezing could not completely stop microorganism growth, since some psychrophilic ("cold-loving") organisms could thrive at temperatures well below freezing. Furthermore, enzymatic activity continues, albeit more slowly, even at temperatures as low as 400° F below zero. M. A. Joslyn, "Certain Technological Aspects of Preservation Freezing," *QFF* (Sep. 1938): 11.

¹⁵ Harold T. Meryman, "Mechanics of Freezing in Living Cells and Tissues," *Science* 124 (Sep. 1956): 515-21; Joslyn, "Certain Technological Aspects," 13.

proven willing to pay a high price for freshness—particularly vegetables such as peas, spinach, asparagus, and lima beans, and fruits such as strawberries, all of which had proven resistant to other forms of processing. For these products, as one food technologist put it in 1938, "preservation with the minimum alteration in composition, flavor, appearance and nutritive value is our aim."¹⁶ The managers of General Foods invested in quick freezing because they were convinced that it was possible to manufacture a new economic structure around perishable foods without altering the foods' biological structures. Consequently, General Foods' managers believed, quick freezing could be applied to the entire range of perishable foods eaten by Americans, making even the "fresh" foods sold in grocery stores into profitable, branded, nationally distributed packages.¹⁷

In the gap between theory and practice, however, many highly perishable foods proved resistant to the freezing process. Even as General Foods embarked on an economic experiment with frozen food in the 1930s, a loose network of agricultural scientists began searching for the chemical and biological knowledge needed to make organisms conform to the demands of mass production.¹⁸ Helmut Charles "Dutch" Diehl was one of the most active of these researchers. Diehl joined the Bureau of Plant Industry of the U.S. Department of Agriculture in 1920, where he assisted with experiments in plant physiology and biochemistry while attending the University of Maryland and the USDA Graduate School. Sometime between 1920 and 1924, Diehl began occasional investigations into fruit and vegetable freezing. Diehl was especially interested in the chemical and physiological changes that occurred when peas were frozen, since at that time all efforts to freeze them had resulted only in bitter, discolored, and chewy objects barely reminiscent of peas. In 1924, Diehl moved to the Bureau of Plant Industry laboratory at Wenatchee, Washington, where he became increasingly interested in the problems of freezing the fruits and vegetables of the Pacific Northwest. By 1931, Diehl had convinced his superiors in

¹⁶ Joslyn, "Certain Technological Aspects," 10. Harden F. Taylor, in remembering his work on the techniques for freezing fish in the 1920s and 1930s, acknowledged that freezing was the most expensive option, but "in those days, we were concerned with the problem of perfection in getting the fish to the public." Taylor interview, 17.

¹⁷ "Let Them Eat Cake," 135, 137.

¹⁸ The effort to coax non-human organisms into the structures of industrial society is a central theme of Susan R. Schrepfer and Philip Scranton, eds., *Industrializing Organisms: Introducing Evolutionary History* (New York: Routledge, 2004); Michael Pollan, *The Botany of Desire: A Plant's-Eye View of the World* (New York: Random House, 2000).

the Bureau that quick freezing could revolutionize produce marketing in the Northwest, and consequently received a commission to establish the USDA Frozen Pack Laboratory in Seattle.¹⁹

For the next decade, Diehl headed the only publicly funded laboratory in the nation dedicated solely to the chemistry, microbiology, and technology of frozen food. In direct consultation with processors such as Birds Eye, Diehl and his colleagues shaped a research program at the Frozen Pack Laboratory aimed at making frozen produce commercially viable. In the 1930s, this entailed a focus on two main issues: 1) determining the maximum (lowest cost) temperature at which particular fruits and vegetables could be frozen without causing significant loss of quality, and 2) selecting and breeding plant varieties best suited to freezing.²⁰ Working on this latter issue, for instance, the Frozen Pack Laboratory oversaw the planting of dozens of varieties of lima beans in multiple locations in the state of California in 1939, searching for the combination of genetics, soil, and climate conditions that would produce a lima bean that, once frozen, best preserved its color, flavor, and texture.²¹ Frozen food processors greatly appreciated such efforts, immediately recognizing the potential profits to be gained from applying the results of publicly funded research to their own specific commercial problems.²² Diehl reveled in the attention, though he occasionally worried that he had insufficient time to perform actual research while being "besieged on some days by visitors to the Laboratory."²³ Besides working in close cooperation with private industry, Diehl corresponded frequently and in great detail with other agricultural scientists working on the science and technology of freezing. Included in his network were important figures such as Maynard A. Joslyn at the University of California (who worked on deactivating enzymes by immersing fruits in syrups and blanching vegetables in hot

¹⁹ Western Regional Research Laboratory, Biographical notes on H. C. Diehl, Feb. 29, 1940 and Helmut Charles Diehl, Personnel Information Sheet, Jul. 23, 1940, Agricultural Research Service Records, RG 310, Records of the Western Regional Research Center, Central Correspondence File, Accession 90-001, National Archives Pacific Region, San Bruno, CA (hereafter Records of the Western Regional Research Center), Box 7, Folder 8.

²⁰ H. C. Diehl, "Research Activities in Freezing Preservation, 1940," Jan. 17, 1941, *ibid.*, Box 4, Folder 4; USDA, "Research Staff Moves into New Laboratory," Press Release, Nov. 13, 1940, *ibid.*, Box 2, Press and Radio Releases folder; H. C. Diehl, "Progress Report of the U.S. Frozen Pack Laboratory at Seattle, Washington," Text for a Talk before the Northwest Fruit Barrelers Association, Portland, OR, Jan. 4, 1933, *ibid.*, Box 3, Folder 22.

²¹ USDA Bureau of Agricultural Chemistry and Engineering, Food Research Division, Report on Research Line Project b-1-3-11, "Technology of the Preservation of Vegetables by Freezing," Dec. 31, 1939, Records of the Western Regional Research Center, Box 1, Folder 1.

²² Processors and growers in Washington were particularly interested in freezing apples without having the apples turn disastrously brown in the process, a challenge not easily surmounted. Henry G. Knight to H. C. Diehl, Nov. 18, 1939, Records of the Western Regional Research Center, Box 2, Folder 1.

²³ USDA Food Research Division, Seattle, Quarterly Report, Supplementary Statement, Mar. 31, 1937, Records of the Western Regional Research Center, Box 1, Folder 6.

water prior to freezing), R. Brooks Taylor at the University of Tennessee (who developed techniques for preserving flavor and texture in frozen strawberries), Ernest W. Wiegand at Oregon State College (who organized the first college course in frozen food technology), and Donald K. Tressler (a chemist who worked with Clarence Birdseye and General Foods in the 1920s and 1930s and later authored multiple textbooks on freezing preservation).²⁴ For Dutch Diehl, who had stumbled into the scientific network of frozen food without ever completing a graduate degree, the 1930s were a time of exciting experimentation. The challenge of converting the theoretical promise of frozen food into a commercially viable reality allowed Diehl and his colleagues to carve out highly respected and stable careers for themselves, doing stimulating intellectual work with clear practical applications.²⁵

Industrial agriculturists were the third group in the 1930s who became excited by the potential payoffs from experiments with frozen food. While food processing companies such as Birds Eye saw untapped markets and agricultural scientists saw a technically sweet challenge, produce farmers saw in freezing the possibility to stabilize the chaotic relationship between production and consumption in their industry. This promise was well understood by Horace Campbell, an assistant of Dutch Diehl's at the USDA Frozen Pack Laboratory, who explained to

²⁴ Reams of this correspondence are contained in Diehl's records housed at the National Archives in San Bruno. See, for example, H. C. Diehl, "Memorandum for Dr. F. C. Blanck Regarding the Trip to TVA Headquarters at Knoxville, TN," Jun. 28, 1938, Records of the Western Regional Research Center, Box 1, Folder 15. On Joslyn, see "Joslyn Returns to University of California," *QFF* (Jan. 1946): 84. On the work of R. Brooks Taylor in connection with the Tennessee Valley Authority's work on freezing strawberries, see Gabrielle M. Petrick, "Breaking the Ice: Developing Frozen Foods that Americans Would Eat, 1930-1955," paper presented at the Society for the History of Technology, Atlanta, GA, Oct. 23, 2003. On Wiegand, see "First Citizens in the Quick Frozen Food Industry: E. H. Wiegand," *QFF* (Oct. 1938): 36, 31. On Donald K. Tressler, see "Tressler, Greatest Living FF Technologist, as Publisher, Counsels an Industry," *QFF* (May 1963): 46-7. Although scientists in Europe had begun the first important experiments on quick-frozen food, Diehl did not maintain regular contacts with Europeans, although in 1939 he sent an assistant to tour overseas labs. The assistant was impressed only by Swiss and German efforts. V. H. McFarlane, "Report of Trip to England, France, Germany, and Switzerland, May and June, 1939, to Study Various Preservation Methods for Foods," Jul. 24, 1939, Records of the Western Regional Research Center, Box 1, Folder 1.

²⁵ On early twentieth-century agricultural scientists gaining personal and professional satisfaction doing work with clear commercial applications, see Barbara A. Kimmelman, "Organisms and Interests in Scientific Research: R. A. Emerson's Claims for the Unique Contributions of Agricultural Genetics," in *The Right Tools for the Job: At Work in Twentieth-Century Life Sciences*, ed. Adele E. Clarke and Joan H. Fujimura (Princeton: Princeton University Press, 1992), 198-232. Diehl would leave the Frozen Pack Laboratory a few years after it was absorbed into the Western Regional Research Laboratory in 1940, coming to believe in 1943 that his new superiors had become too interested in dehydrated foods and were not providing him with the proper resources to continue his work on frozen foods. Diehl moved to the privately funded Refrigeration Research Foundation, where he continued his work on frozen foods and was highly respected within the industry. H. C. Diehl, "Notes for Dr. R. Y. Winters, Discussion of Work of Commodity Processing Division, Western Regional Research Laboratory," Apr. 23, 1942, Records of the Western Regional Research Center, Box 9, Commodity Processing Folder; Horace Campbell to H. C. Diehl, Feb. 18, 1941, *ibid.*, Box 1, Folder 15; "Diehl Appointed TARS Managing Director," *QFF* (Oct. 1958): 281, 302.

a group of produce farmers in 1940 why his work on frozen food was useful to them: "We know what the grower of fruits and vegetables for the fresh market trade is up against; namely, as the harvest reaches its peak production, the markets become glutted with fresh produce." In these times of surplus, as Campbell hardly needed to remind his audience, the result was "price drops to the grower, very frequently to the point where he even fails to re[coup] the cost of production."²⁶ Farmers could avoid this problem, Campbell argued, by selling some of their surplus truck crops²⁷ to frozen food processors, allowing produce that might otherwise be sold at a loss to be stored and later sold in times of scarcity for a premium price. Importantly, Campbell pointed out, "the superior quality that can be obtained" by freezing (in comparison to canning or other methods of preservation) meant that farmers would receive only the highest prices from frozen food processors for their raw materials.²⁸

One farmer had wholeheartedly accepted this gospel a full decade before Campbell preached it to Northwestern produce growers. Charles F. Seabrook, owner of the nation's largest vegetable farm, first joined forces with Birds Eye in 1930 and within eight years produced two-thirds of the nation's frozen vegetables.²⁹ Seabrook's decision to convert his successful truck farm in southern New Jersey into an industrial center of frozen vegetable production was part of his long-term effort to minimize the risk and unpredictability inherent in produce farming. In 1913, "C. F." (as even his family always called him) bought his father's small southern New Jersey truck farm—famous for supplying Philadelphia and New York consumers with high quality spinach—and began systematically converting the small farm into a giant industrial agribusiness. Driven by a "strong dislike of dirt" and a professed admiration of the efficiency-oriented mindset of mechanical engineers, Seabrook hoped to rationalize the production of

²⁶ Horace Campbell, "Frozen Food in Relation to the Farm," n.d. (1940), Records of the Western Regional Research Center, Box 3, Folder 22, page 10.

²⁷ The term "truck" in this case bears no relation to motor vehicles; instead, the term derives from the much older usage of "truck" to refer to the practice of bartering. When applied to crops, it has referred since the nineteenth century to fruits and vegetables grown for urban markets, including tomatoes, cucumbers, spinach, peas, strawberries, cabbage, lettuce, and so on. A good history of truck farming in relation to the metropolis is Marc Linder and Lawrence S. Zacharias, *Of Cabbages and Kings County: Agriculture and the Formation of Modern Brooklyn* (Iowa City: University of Iowa Press, 1999).

²⁸ Campbell, "Frozen Food in Relation to the Farm," 14.

²⁹ "Deerfield Packing Corporation Supervisors' Conference," 1939, Artifacts File, Seabrook Educational and Cultural Center, Upper Deerfield Township, NJ (hereafter SECC), Deane Eadie Folder. "Deerfield Packing Corporation" was the name of the Seabrook Farms subsidiary responsible for processing frozen vegetables; to avoid confusion in the text, I will refer to all Seabrook operations under the name of the parent firm.

spinach to match the assembly-line methods used to make the Ford Model T. In fact, Seabrook earned the sobriquet "the Henry Ford of Agriculture" for his success in this regard.³⁰ Years before he had ever heard of frozen food, Seabrook applied industrial principles to all aspects of vegetable production. To ensure steady supplies of raw materials, in 1907 he installed the nation's first overhead irrigation system in his fields.³¹ Seeking economies of scale, he steadily increased the acreage of the farm; starting with his father's 57 acres in 1913, Seabrook's operation covered 3,400 acres in 1921. Expansion required capital, which he secured by incorporating the farm and inviting investment from New York banking firms. Seabrook secured a pliant workforce by offering low-cost housing to Italian and Russian immigrants who moved from Philadelphia to the company town he erected on his land. The farm even looked like a factory in the early 1920s, as Seabrook put his engineering inclinations into practice by building his own concrete highway, rail sidings, power plant, canning factory, ice station, sawmill, blacksmith's shop, and a refrigerated warehouse powered by giant Corliss steam engines (see **Figure 4.2**).³²

³⁰ Bruce Barton, "You Don't Altogether Like Your Job?" *American Magazine*, May 1921, 114; John Seabrook, "The Spinach King," *New Yorker*, Feb. 20, 1995, 225.

³¹ John M. Seabrook, *The Henry Ford of Agriculture: Charles F. Seabrook 1881-1964 and Seabrook Farms 1893-1959* (Seabrook, NJ: Seabrook Educational and Cultural Center, 1995), 3; Hubert G. Schmidt, *Agriculture in New Jersey* (New Brunswick: Rutgers University Press, 1973), 193.

³² Seabrook, *Henry Ford of Agriculture*, 6-11.

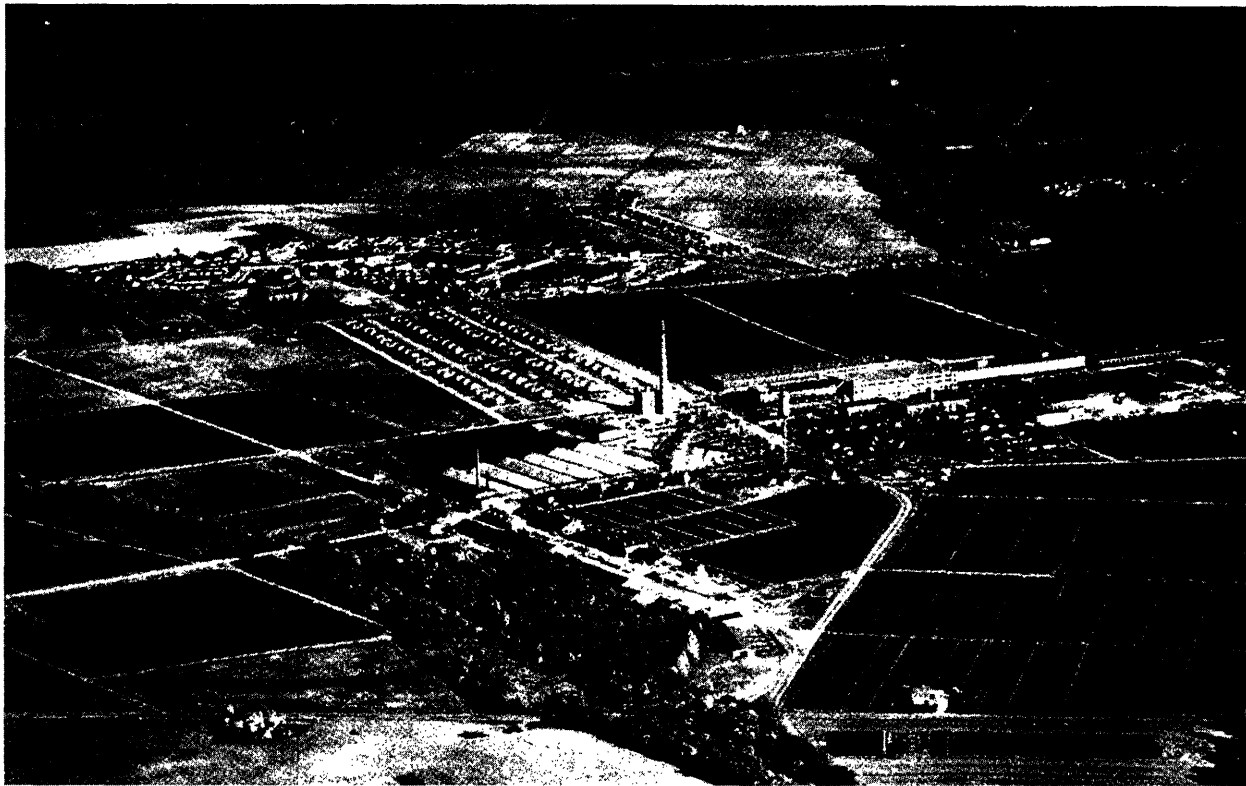


Figure 4.2: Aerial photograph of Seabrook farms

This view of Seabrook Farms in the mid-1950s shows a central processing plant nestled among greenhouses, worker villages, and just a few hundred of the thousands of acres dedicated to intensive fruit and vegetable production in southern New Jersey. Seabrook Educational and Cultural Center photo collection.

For C. F. Seabrook, the point of all this industrial machinery and organization was to "eliminate the chance from farming."³³ When Seabrook claimed to "loathe" farming, it was not so much that he disliked the dirty, hard work, but that he disliked being dependent upon the unpredictable whims of nature to make a living. As he told an interviewer in 1921, "it seemed as if nature always stacked the cards against you.... No matter how hard you worked, you couldn't be sure of anything."³⁴ Even when rains came at exactly the right time of year and allowed for a bumper crop, profits could quickly evaporate in a glutted market. This became especially apparent to C. F. in the early 1920s, when southern truck farmers increasingly took advantage of faster and cheaper rail transport to send their produce to Seabrook's primary markets in New York and Philadelphia. These competitors enjoyed a warmer, sunnier climate and consequently

³³ "This Is Seabrook Farms," *QFF* (Aug. 1956): 164.

³⁴ Barton, "You Don't Altogether Like Your Job?" 34, 114.

a longer growing season, enabling them to sell their produce in Northern markets several weeks before Seabrook.³⁵ Through the 1920s Seabrook's profits fell rapidly as he was forced to market his produce at lower mid-season prices, and in 1924 the New York investors who had helped C. F. build his southern Jersey farm into an industrial enterprise fired him and put the farm in receivership (although C. F. maintained ownership of the land).³⁶ For the next five years, Seabrook happily became the civil engineer he had always wanted to be, building highways in New Jersey, Costa Rica, and Cuba, and constructing railroads, canals, and docks in the Soviet Union.³⁷ But in 1929, the New York bankers running Seabrook Farms decided to pull out of the truck farming business, and C. F. bought back his farm.³⁸ It was, unfortunately, a less than ideal time to purchase a farm. As the Great Depression set in, C. F. was now faced with not only his old competitors on southern truck farms, but also depressed produce prices and tight credit.

By 1930 these circumstances set the stage for Seabrook Farms to establish a decades-long relationship with General Foods as the nation's largest producer of frozen vegetables. Freezing, as C. F. readily understood, would allow him to "eliminate the chance" from the marketing of his produce, in the same way irrigation had done for his growing operations. As he later told a reporter about his decision to enter the frozen food field, "the instability of the fresh vegetable market seemed like too much of a gamble," whereas selling produce to General Foods under contract guaranteed a steady cash flow, entirely independent of seasonal peaks and dips in supply and demand.³⁹ C. F.'s son Belford set the chain of events into motion, building an experimental freezing plant on the farm after having been sent by C. F. to spend the summer of 1929 in Clarence Birdseye's laboratory in Gloucester. It is unclear whether Seabrook or General Foods initiated the deal that established Seabrook Farms as the primary producer of Birds Eye frozen vegetables, but in any case it was immediately clear, as C. F.'s son John would later recall, that the contract cemented a "perfect match."⁴⁰ General Foods had patents, exhaustive reserves of capital, and decades of experience in marketing new products. Seabrook Farms had 25,000

³⁵ James L. McCorkle, Jr., "Agricultural Experiment Stations and Southern Truck Farming," *Agricultural History* 62 (Spring 1988): 234-43.

³⁶ Seabrook, *Henry Ford of Agriculture*, 9, 12.

³⁷ Seabrook, *Henry Ford of Agriculture*, 13-15.

³⁸ Seabrook, *Henry Ford of Agriculture*, 15.

³⁹ Mona Gardner, "The Assembly-Line Farmer," *Reader's Digest*, Jan. 1944, 96.

⁴⁰ Seabrook, *Henry Ford of Agriculture*, 24-5.

acres of land, a processing plant, and experience in breeding and selecting plant varieties (especially peas, spinach, and lima beans) for commercial use.⁴¹ General Foods wanted a large volume of high-quality vegetables worthy of the Birds Eye brand, and Seabrook was happy to supply these in exchange for a guaranteed, non-seasonal market.⁴² Frozen food was the final link in the agro-industrial chain that C. F. had been constructing for nearly two decades, providing stability in the chaotic produce economy.

By the end of the 1930s all conditions seemed to have been met for frozen food to fulfill its promise as a revolutionary mass production industry. Anchoring the industry was General Foods, a corporation both able and willing to pump capital into the technology required to produce and market the new product on a national scale. Agricultural scientists and food technologists created and disseminated the knowledge required to convert biological organisms into industrial commodities. Industrial farmers like C. F. Seabrook could provide raw materials in the volume necessary to achieve economies of scale in production. Defying the Great Depression, the industry increasingly showed signs of maturity in the late 1930s. Birds Eye Frosted Foods upped its production by 140 percent between 1935 and 1937.⁴³ A major competitor joined the field in 1937 with the introduction of Honor Brand Frosted Foods, which, after being purchased by Stokely-Van Camp in 1939, would establish itself for the next several decades as the nation's second-largest frozen food packer.⁴⁴ A trade journal dedicated solely to the industry appeared in August 1938 when Edwin W. Williams began publishing *Quick Frozen Foods*. But even Edwin Williams, who would be the industry's most enthusiastic supporter for the next forty years, recognized in 1939 that frozen food had not yet lived up to its promise.

The problem was not one of production. After a decade of intensive scientific and technological work, Williams claimed, "today's frosted food package is a remarkably perfect

⁴¹ By 1935, Seabrook had hired agronomist Frank App to select and develop seed varieties with traits suitable for freezing. "This Is Seabrook Farms," 169; Frank App to H. C. Diehl, Jan. 16, 1935, Records of the Western Regional Research Center, Box 10, Folder 7.

⁴² Seabrook, *Henry Ford of Agriculture*, 25-6.

⁴³ H. J. O'Brien, "Frosted Foods Sales Show Sharp Gain For Past Year," *WSJ*, Jan. 31, 1938, 3.

⁴⁴ "Frozen Foods: Interim Report," *Fortune*, Aug. 1946, 109; Advertisement for Honor Brand Frosted Foods, "Look! Here Is Where You Can End Your Search for Freshness," 1937, N. W. Ayer Advertising Proof sheets, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC (hereafter Ayer Proof sheets), Series 2, Box 271, Folder 4; Stokely-Van Camp, Inc., *Annual Report*, 1955.

piece of merchandise." "But," he continued, "distribution—there's the rub."⁴⁵ Frozen food, as Williams understood, fulfilled only one half of the Fordist equation of mass production. The industry had developed elaborate technical systems for making standardized goods in huge volumes, but had not developed an equally elaborate system of distribution to move its goods to *the masses*.⁴⁶ Even though a package of frozen food might leave the factory as a "perfect piece of merchandise," it would too often arrive in the consumer's hands as either a product of dubious quality or at such a high price as to discourage mass consumption. This was because the distribution of frozen food required technological systems of unprecedented scale, scope, and complexity. These systems simply did not exist in the 1930s. The refrigeration equipment required to maintain frozen food at extremely low temperatures was rare or nonexistent in most warehousing, transportation, and retail facilities. Although an extensive nationwide network of refrigeration existed, that distribution network had been built primarily for the movement of Chicago dressed beef, California produce, and Midwestern butter and cheese—all products that required cool temperatures but that could be seriously damaged by freezing.

The problem of distribution was especially apparent in the lack of warehouse space dedicated to maintaining freezing temperatures. Warehousing was an essential component for mass distribution of frozen food, since the production season of frozen food was by necessity tied to summer and fall harvesting periods, which never aligned well with peaks of consumption falling in late winter and early spring. Furthermore, frozen food factories were located in rural areas, far from urban centers of consumption. Frozen food businessmen would occasionally dream of an ideal distribution system, one in which these constraining factors of time and space would be overcome by the construction of "a refrigerated tunnel extending from the packing plant to the home freezing cabinet," allowing consumers to merely push a button when they

⁴⁵ Edwin W. Williams, "Are Frosted Foods at the Crossroads?" *QFF* (Mar. 1939): 22.

⁴⁶ On the conceptualization and historical development of mass production within the American economy, see Philip Scranton, *Endless Novelty: Specialty Production and American Industrialization, 1865-1925* (Princeton: Princeton University Press, 1997), esp. 10-11; Alfred D. Chandler, Jr., *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge, MA: MIT Press, 1962); David A. Hounshell, *From the American System to Mass Production, 1800-1932: The Development of Manufacturing Technology in the United States* (Baltimore: Johns Hopkins University Press, 1984). On the necessity of mass distribution for making mass production possible, see Chandler, *Visible Hand*, 209-39. On the development of mass consumer culture, see William Leach, *Land of Desire: Merchants, Power, and the Rise of a New American Culture* (New York: Pantheon Books, 1993).

wanted a package of frozen lima beans to arrive in perfect condition directly from the factory.⁴⁷ The absurdly high cost of constructing such an "ideal" system, however, forced frozen food distributors to rely instead on existing warehousing facilities. Through the 1930s, however, the vast majority of available cold storage warehouse space was dedicated to storing apples in winter and eggs in summer, along with somewhat less seasonal movements of butter and cheese, poultry, meat, and general produce.⁴⁸ As a consequence, although over 275,000,000 cubic feet of public cold storage space existed in the decade, less than 20 percent of that space was capable of keeping temperatures at or below freezing.⁴⁹ Without adequate freezer storage space, frozen food processors could not economically move their goods beyond tightly bound geographical markets.

The expense of transporting food over long distances at freezing temperatures further compounded the problem of distribution. Developments in mobile refrigeration up to the late 1930s lagged far behind the improvements made in stationary refrigeration technology since the late 19th century. By the late 1920s, refrigeration engineers had developed efficient, reliable mechanical compression systems capable of absorbing impressive amounts of heat, allowing brewers, dairies, and meatpackers to achieve unprecedented control over temperature conditions in factories.⁵⁰ These mechanical compressors required enormous engines, however, to produce the high pressures needed to achieve very low temperatures, making them unsuitable for mobile applications.⁵¹

Refrigerated transportation in the 1930s was consequently limited to one of three methods, each preventing certain obstacles to the economically viable movement of frozen food.

⁴⁷ H. J. Humphrey, "Temperatures for Frozen Foods," *Ice and Refrigeration* (Aug. 1951): 52; Edwin W. Williams, "Frozen Foods 2000 A.D.: A Fantasy of the Future," *QFF* (Feb. 1954): 102.

⁴⁸ Pamphlet for New England Cold Storage Co. (n.d. (1900?)), Warshaw Collection of Business Americana, Smithsonian Institution, National Museum of American History, Archives Center, Washington, DC, Warehouses Subject File, Box 1, Folder 20; C. Bartlett Eddy, "The History of Cold Storage Warehouses in New England," *QFF* (Sep. 1959): 84-8.

⁴⁹ "Cold Storage Space Idle Now, But New Warehouses Keep Rising," *Business Week* (hereafter *BW*), Jun. 25, 1930, 26-8; Sidney Shalett, "Warehousemen Chill Everything but Ideas," *Nation's Business*, Feb. 1954, 33. The total volume of cold storage space was actually quite a bit higher than this, since meat packers maintained their own private facilities.

⁵⁰ Oscar Edward Anderson, Jr., *Refrigeration in America: A History of a New Technology and Its Impact* (Princeton: Princeton University Press, 1953), 97-102.

⁵¹ Pacific Fruit Growers Express actually developed a mechanically refrigerated railcar in 1931, but it was never used commercially since it proved ineffective in warm weather and was too expensive to justify widespread use. "Mechanically Operated Reefer No Longer an 'Experiment'," *QFF* (Oct. 1951): 61.

Regular, or "wet" ice, was the cheapest refrigerating option and the one most widely used by railroads. Even when mixed with salt to lower the freezing temperature, however, wet ice generally proved incapable of producing the extremely low temperatures required to keep frozen food in pristine condition. Furthermore, wet ice was extremely heavy and bulky and had the unfortunate habit of melting along the trip, requiring re-icing at designated stops along the track which delayed shipments and greatly increased the chances of frozen food melting en route.⁵² Dry ice (solid carbon dioxide) was the second option available to shippers of frozen food. Capable of absorbing about twice as much heat as wet ice, pound-for-pound, dry ice could effectively keep frozen food frozen. Dry ice was, however, far more expensive than wet ice; as late as 1949, a Pacific Fruit Express traffic manager could note that the cost of dry ice in a refrigerated railcar exceeded the base cost of shipping (minus refrigeration) by as much as \$250.⁵³ The third refrigerating option available in the 1930s was the cold plate system, in which hollow metal plates, installed either in railcars or truck bodies, were filled with pressurized refrigerant from a central compression plant. Plate systems had the great advantage of producing extremely low and controllable temperatures with relatively low operating expenses, but had the disadvantage of requiring a much higher initial investment in equipment than either dry or wet ice systems. Furthermore, after about eight hours of use, plate systems required overnight charging at the central plant; as a consequence, they were limited almost exclusively to local distribution of items such as ice cream.⁵⁴ Through the 1930s, the limitations of mobile refrigeration technology made long-distance transportation of frozen food prohibitively expensive.

The retail end of the frozen food distribution chain was even less developed than the warehousing and transportation sectors. Chain stores proved especially reluctant to invest in expensive freezer cabinets in the 1930s. Freezer cabinets at the time not only carried a high sticker price, but also ate up costly electricity and took up floor space that chain store managers preferred to dedicate to food products with proven sales records. Even five years after the

⁵² William McGinnis Holroyd, "Influences and Challenges of the Growing Frozen Food Industry on Refrigerated Transport Equipment" (Ph.D. diss., Indiana University, 1960), 21, 43-4.

⁵³ Holroyd, "Influences and Challenges," 37; A. L. Reneau, "Frozen Food Transportation and Distribution," *Ice and Refrigeration* (Oct. 1949): 18.

⁵⁴ Holroyd, "Influences and Challenges," 45-6.

American Radiator Company developed a low-cost retail freezer cabinet in 1934, only about 8,000 cabinets were to be found in the nation's grocery stores—and many of these were located in specialty stores that sold only frozen foods at high prices.⁵⁵ High sales volumes could have allowed chain stores to offset the cost of cabinets, but many consumers in the 1930s associated frozen food with "cold storage" food, which had gained a poor reputation in the early twentieth century after investigations by state health commissions in New York and Massachusetts.⁵⁶ Selling frozen food was an expensive and risky gamble for most retailers in the 1930s, as consumers either distrusted the product or refused to pay high prices for guaranteed quality.

With retailers reluctant to invest in freezing equipment, frozen food processors depended on luxury hotels and restaurants for most of their sales in the 1930s. Chefs proved more willing than the average consumer to pay the high prices demanded by frozen food distributors to cover the costs of transporting and storing high-quality out-of-season vegetables and fruits.⁵⁷ Even in the institutional market, however, the problem of distribution prevented frozen food from achieving full acceptance. Inadequate refrigerated transportation equipment and warehouse space could ruin a "perfect piece of merchandise" on even the shortest trip from factory to stovetop. For instance, food technologist M. A. Joslyn wrote Dutch Diehl in 1935 to recount a distribution disaster he had witnessed first-hand. Joslyn had been hired by F. M. Ball, a San Francisco area frozen food packer, to develop a low-temperature blanching system to improve the quality of its frozen peas. Within weeks of installing the new system, Ball began receiving "excited" calls from its distributors, who in turn had received angry complaints about brown and sour peas from hotel chefs in San Francisco. Ball blamed Joslyn's blanching system, but Joslyn found that packages of peas leaving the Ball factory as well as those stored in distributor warehouses were in perfect condition. The cause of the brown peas, Joslyn soon found, was "faulty distribution" between the warehouse and the hotel. Either the delivery trucks

⁵⁵ "Quick-Frozen Foods," *Fortune*, Jun. 1939, 118; "Birds Eye Story," 67; Williams, "Are Frosted Foods at the Crossroads?" 22.

⁵⁶ "Frozen Foods: Interim Report," 180; Wilde, "Industrialization," 209-10; Anderson, *Refrigeration in America*, 127-41.

⁵⁷ O'Brien, "Frosted Foods Sales Show Sharp Gain," 3.

had poor insulation or the hotel's freezers were malfunctioning, allowing the peas to defrost and leading to rapid growth of lactic acid bacteria, causing the brown color and sourness.⁵⁸

If good quality could not be maintained in the distribution of frozen peas within the tight geographical confines of the Bay Area, one could hardly hope for better results on a national scale. This would explain why General Foods utterly failed in its efforts to develop a national market for frozen food in the 1930s. The company struggled to convince retailers to carry Birds Eye products, first offering freezing cabinets to stores on a monthly rental basis, then slashing the wholesale price of an average package from 25 cents to 16 cents. These efforts met with some success, giving General Foods a network of 2,000 retailers by 1937, up from 516 in 1933.⁵⁹ Even so, retail distribution of Birds Eye frozen food was limited almost exclusively to specialty stores in the New England and New York area. Without mass distribution to provide the volume sales required to justify the expense of mass production, Birds Eye racked up losses of approximately \$17 million before turning its first profit in 1941.⁶⁰ In fact, had fortune not smiled on the industry during World War II, the problem of distribution might have consigned frozen food to the dustbin of history.

An Essential Industry

The arrival of World War II temporarily created a mass market for frozen food, but did not lead the industry to solve its underlying technological problem of distribution. Scientific and technological research had led to methods for mass-producing high-quality preserved foods by the eve of the war, but that quality came at a price that prevented mass marketing.⁶¹ Consequently, canned fruits and vegetables continued to be the obvious choice for consumers searching for low-price produce available year-round. In 1940, per capita consumption of

⁵⁸ M. A. Joslyn to H. C. Diehl, Nov. 8, 1935, Records of the Western Regional Research Center, Box 10, Folder 1.

⁵⁹ "Birds Eye Story," 67-9.

⁶⁰ Ferguson, *General Foods Corporation*, 19.

⁶¹ Richard Tedlow has characterized the development of mass marketing as following a historical path from Phase I (goods sold in low volume at a high margin in geographically limited markets) to Phase II (goods sold in high volume at a low margin on a national scale) to Phase III (goods sold in high volume at multiple price levels to demographically segmented markets). The situation of the frozen food industry at the end of the 1930s does not correspond neatly to either Phase I or Phase II, since frozen food was sold in relatively high volumes but as a luxury item for geographically limited markets. See Richard S. Tedlow, *New and Improved: The Story of Mass Marketing in America* (New York: Basic Books, 1990).

canned vegetables amounted to 34.4 pounds, an amount 57 times greater than the 0.6 pounds of frozen vegetables Americans consumed that year. In the next three years, however, this situation changed markedly. In 1944, American civilians continued to eat 34.4 pounds of canned vegetables per person, but the average individual's consumption of frozen vegetables had nearly tripled to 1.6 pounds.⁶² Improvements in the technology of distribution clearly did not cause this increased consumption, since the wartime emergency essentially halted production of new transportation or refrigeration equipment for civilian use. Instead, the growth of the frozen food industry during the war resulted from a sudden jump in demand for all processed foods.

Most of this increased demand came from the armed forces of the United States and Great Britain. Canned food particularly appealed to military quartermasters. Although the American canning industry's cylindrical cans (unlike the French or Norwegian flat tins) resulted in some wastage of space during transportation either overseas or in soldiers' packs, the foods contained compactly within required no refrigeration, allowing easy storage in diverse locations.⁶³ In early 1942, the War Production Board formally recognized the importance of canned fruits and vegetables to the war effort by requiring canners to set aside certain items for military use. Canners were asked, for instance, to reserve 23 percent of their fruit cocktail pack for American soldiers and sailors and lend-lease partners, along with 30 percent of asparagus, 25 percent of lima beans, and 26 percent of peas.⁶⁴ By December 1942, military purchases, combined with tin rationing that limited supplies to canners, had reduced the amount of canned food available to civilians by almost half. Panicked consumers desperately swept available cans off grocery store shelves, leading Food Administrator Claude Wickard to institute rationing of canned foods.⁶⁵ Consumers who had grown accustomed to eating canned peas and asparagus year-round could not turn to their Victory Gardens to provide out-of-season produce. As a consequence, frozen food became the best available option, despite its expense.

⁶² U.S. Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1957* (Washington: GPO, 1960), 187. Per capita consumption of canned fruits and juices was approximately 20 times higher than that of frozen fruits and juices in 1940, with the ratio down to 6.5 by 1944; *ibid.*, 186.

⁶³ Deborah K. Fitzgerald, "Necessity and Convenience in the Military: Food Research for Captive Consumers," paper presented at the Society for the History of Technology, Atlanta, GA, Oct. 23, 2003.

⁶⁴ "Canned Food Allocated to U.S. Armed Forces, Lend-Lease Nations," *WSJ*, Mar. 14, 1942, 8.

⁶⁵ "Food Trade Slows, Awaiting Ceilings," *New York Times* (hereafter *NYT*), Apr. 22, 1942, 35; "Half of '43 Food Pack Going to War; That's the Reason for Rationing," *WSJ*, Dec. 28, 1942, 3.

The frozen food industry was well positioned in 1942 to fulfill the sudden demand for processed food. In January of that year, a group of frozen-food executives, including C. F. Seabrook's son Courtney, organized the National Association of Frozen Food Packers. The new group had the explicit goal of convincing the War Production Board that frozen food production should be considered "essential" for the war effort. Government administrators quickly accepted the packers' argument that the amount of steel required to construct and maintain frozen food plants paled in comparison to the amount of steel used to can food.⁶⁶ Unconstrained by the quotas imposed on the canning industry, the frozen food industry quickly ramped up production in 1943 to 350 million pounds of fruits and vegetables; 140 million pounds of this were purchased by the armed forces of the United States and Britain, the rest going to civilians seeking replacements for canned items.⁶⁷ As canned food shortages worsened in late 1943, the War Food Administration met with the National Association of Frozen Food Packers and urged the processors to increase their production still more.⁶⁸ The Office of Price Administration (OPA) provided further incentives for increased production of frozen food, setting generous wholesale price ceilings that allowed processors to sell at a 27 percent margin despite the OPA's findings that the average processor margin on frozen vegetables before price controls had been 18.5 percent.⁶⁹ Furthermore, although the OPA instituted rationing on frozen food at the same time as it had rationed canned food, those restrictions were lifted on March 18, 1944—a full 17 months before canned food was derationed.⁷⁰ Taken all together, the purchasing and administrative policies of the federal government enabled a mass market for frozen food during the war.

⁶⁶ "Frozen-Foods Packers Organize," *NYT*, Jan. 26, 1942, 28; Seabrook, *Henry Ford of Agriculture*, 27.

⁶⁷ Joseph M. Guilfoyle, "Frosted Foods: Industry's 1941 Pack Expected to Approach Peak of Billion Pounds," *WSJ*, Aug. 14, 1941, 1; Joseph M. Guilfoyle, "Frozen Foods: A Complete Dinner (Soup to Cake) Will Be Marketed after the War," *WSJ*, Aug. 7, 1943, 1.

⁶⁸ Marvin Jones to Chester Bowles, Aug. 16, 1944, Agricultural Marketing Service Records, RG 136, Fruit and Vegetable Branch, Subject-Numeric General Correspondence, 1942-44, Entry 58, National Archives II, College Park, MD (hereafter RG 136, Entry 58), Box 10, Folder 9.

⁶⁹ F. L. Thomsen to Members of the OPA Food Accounting Staff, "Costs and Margins for Canned and Frozen Fruits and Vegetables, and Dried Fruits," Oct. 25, 1945, Office of Price Administration Records, RG 188, Entry A81, Processed Fruit and Vegetable Subject File No. 2, 1944-46, National Archives II, College Park, MD, Box 611.

⁷⁰ "Frozen Foods: Interim Report," 105.

The largest firms in the frozen food field benefited most from the sudden increase in demand.⁷¹ The Birds Eye division of General Foods, which in 1940 had been considered by Wall Street analysts to be "in the experimental stage" and an unimportant contributor to General Foods' earnings, turned its first profit in 1941 as armed forces purchases first took off.⁷² Edwin T. Gibson, Vice President of the General Foods Birds Eye division, predicted in 1944 that the long-expected "mass market" for frozen foods was just around the corner, with increased production expected to bring the price of frozen food within the reach of "Americans of average income."⁷³ By 1944, Birds Eye controlled about half of the nationwide market for frozen food, having used the wartime influx of cash to buy out several smaller competitors on the West Coast.⁷⁴ Seabrook Farms likewise seized the opportunity to improve its competitive position in preparation for the expected postwar boom. Still the largest producer under contract for Birds Eye, Seabrook also began selling directly to the Army Quartermaster and to civilians under its own label in 1943. By 1945, Seabrook grossed \$1.6 million on direct sales of its own product, using the funds to double the size of its freezing plant and on-site cold storage facilities.⁷⁵ Increased production on the farm and in the freezing plant required Seabrook to recruit a workforce of unprecedented size. After experiencing difficulty finding local men and women willing to work for low wages in exchange for a steady job and free housing, C. F. crafted a "rural global village" of displaced peoples from the American South, Jamaica, Estonia, and above all, Japanese-Americans released from internment camps specifically to join the Seabrook labor force.⁷⁶ As of January 1945, Seabrook Farms was officially the largest truck farm in the world, employing over 7,500 workers during peak season and covering 31,000 acres. It was

⁷¹ On the impact of state policies on the growth of big business during World War II, see John Morton Blum, *V Was for Victory: Politics and American Culture during World War II* (New York: Harcourt, Brace, 1976), 117-46.

⁷² "General Foods First Quarter Net on Par with 1940," *WSJ*, Apr. 16, 1941, 5.

⁷³ "Frozen Food Pack to Show 15% Rise," *NYT*, Aug. 26, 1944, 18.

⁷⁴ "Frozen Food," *BW*, Dec. 30, 1944, 65.

⁷⁵ Seabrook, *Henry Ford of Agriculture*, 38; "Frozen Foods: Interim Report," 109; "Company Plans Expansion, Sees Demand Rising," *Seabrook* (Sep. 1945): 1, 3, *The Seabrook Clippings File*, SECC.

⁷⁶ The stories of these migrant and semi-permanent workers are well told in Charles Hampton Harrison, *Growing a Global Village: Making History at Seabrook Farms* (New York: Holmes & Meier, 2003). See also *Oral Histories of a Community*, Volumes I and II, SECC. Seabrook Farms has a fascinating history of agricultural labor relations—including its acceptance of the first closed-shop union contract for agricultural workers in 1941—that is unfortunately beyond the scope of this chapter. See Cindy Hahamovitch, *The Fruits of Their Labor: Atlantic Coast Farmworkers and the Making of Migrant Poverty, 1870-1945* (Chapel Hill: University of North Carolina Press, 1997), 138-50, 182-99; Seabrook, *Henry Ford of Agriculture*, 19-20.

furthermore the only farm of such size dedicated almost solely to producing frozen food.⁷⁷ Large firms like General Foods and Seabrook fully intended to capitalize on wartime conditions by cultivating a permanent mass market upon the cessation of hostilities.

Hundreds of other firms likewise saw the end of the war as the true beginning of the frozen food revolution. During the war, the War Food Administration had not permitted construction of new freezing plants by firms not already engaged in the trade, but the end of these restrictions brought a flurry of investment in new facilities.⁷⁸ Having witnessed the phenomenal growth of Birds Eye during the war, everyone from returning GIs to "[f]ormer ribbon salesmen and taxi drivers" jumped into the fray, often converting small canning factories into frozen food plants. By the end of 1946 at least 450 commercial firms had joined General Foods, Stokely-Van Camp, and Seabrook Farms in packing frozen food.⁷⁹ The big firms were horrified by the arrival of these "fly-by-nighters," as they characterized their new competitors, but bankers and Wall Street investors readily opened their pocketbooks at the mere mention of "quick-freezing."⁸⁰ For instance, Harry C. Cushing, chairman of Pratt's Fresh Frozen Foods, launched 450,000 shares of common stock on the New York Stock Exchange in 1945. Despite the stock's stated book value of 31 cents, investors quickly snapped up shares at more than \$6 apiece.⁸¹ Not all of the new entrants to the frozen food field were over-hyped flashes in the pan. One of the most important companies established at war's end was Snow Crop, headed by a former Birds Eye divisional sales manager; another entrant was Libby, McNeill, and Libby, the giant canning company which had previously been wary of the unprofitable frozen food business.⁸² Both new and old packers were convinced that the wartime market for frozen food was only a foretaste of a giant postwar expansion. By 1947, the frozen food pack had reached the extraordinary volume of nearly one billion pounds.⁸³

⁷⁷ "Farm Facts," *Seabrooker* (Jan. 1945): 3, *The Seabrooker Clippings File*, SECC.

⁷⁸ M. A. Corbett (Processed Marketing Division, Fruit and Vegetable Branch, War Food Admin.) to Frank S. Guerra (Hollister Nut Shelling Company), Aug. 18, 1944, RG 136, Entry 58, Box 10, Folder 9.

⁷⁹ John A. McWethy, "Frozen Food Victory: A Hard-Hit Industry Thaws out Big Surplus," *WSJ*, Mar. 19, 1948, 1 ["ribbon salesmen"]; John A. McWethy, "Frozen Food Glut," *WSJ*, Dec. 3, 1946, 1.

⁸⁰ "Frozen Food Firms, Caught with Huge Inventories, Will Cut Pack 10% to 25% in '47; Stress Quality," *WSJ*, Mar. 21, 1947, 5.

⁸¹ "Frozen Foods: Interim Report," 178.

⁸² *Ibid.*; Libby, McNeill, and Libby, *Annual Report*, 1946.

⁸³ McWethy, "Frozen Food Victory," 1.

Despite rapidly expanding production, the distribution problem that had limited mass marketing through the 1930s remained unsolved. Refrigeration technologies required to transport, store, and merchandise frozen food reliably and at low cost remained underdeveloped. The amount of cold storage warehouse space capable of maintaining freezing temperatures did not increase appreciably during the war, since wartime restrictions on production precluded the manufacture of new refrigeration equipment. Cold storage space remained dedicated primarily to cooling, not freezing, perishable food.⁸⁴ This lack of storage space led to a major shake-up of the industry in the late 1940s. Unable to move the almost one billion pounds of frozen food optimistically produced in 1947, both large and small packers found themselves stuffing cold storage warehouses almost literally to bursting. Unprepared for the 41 percent rise in volume between February of 1946 and 1947, many warehousemen found it impossible to keep packages from thawing and refreezing for lack of adequate space. Desperate to unload inventories, distributors sold off frozen stock at cut-rate prices, too often mixing ruined packages in with the lots.⁸⁵ Major packing companies—including Birds Eye, Stokely, Libby, and Snow Crop—feared that consumers would permanently associate "frozen" with "poor quality," and so slashed their own wholesale prices in order to drive smaller firms with lower standards out of business.⁸⁶ But even with such dramatic efforts to accept low profit margins or even losses to assure their future place in the industry, the big packers could not overcome the fundamental distribution problem that made it extremely expensive to keep a package frozen all the way from the factory to the consumer.

This was especially true on the retail end of the frozen food distribution chain, as retailers continued to resist investing in freezer cabinets. Chain supermarkets, particularly, saw frozen food as too expensive for its most valued customers—buyers of average income who visited stores repeatedly to buy low-priced staples and thereby create high turnover of goods.⁸⁷ In 1946 only 40,000 of 520,000 retail food stores in the United States had facilities to

⁸⁴ "Space Is Scarce," *BW*, Sep. 11, 1943, 29-34; "Warehouse Bulge," *BW*, Jan. 15, 1944, 44-9; "Full House," *BW*, Jul. 1, 1944, 20-1.

⁸⁵ "Frozen Food Squeeze," *BW*, Feb. 22, 1947, 69-72.

⁸⁶ Williams, *Frozen Foods*, 57, 65.

⁸⁷ "A. & P. Experiment," *BW*, Aug. 24, 1946, 57-8, 62.

merchandise frozen food.⁸⁸ Even two years later, frozen food accounted for only 0.4 percent of chain store food sales.⁸⁹ The high price of frozen food had been less of a problem for consumers beset by shortages of canned food during the war, but in the late 1940s the much lower price of both fresh and canned produce proved more appealing to the vast majority of consumers whose food purchasing decisions were based more on price than on promises of convenience. As the president of the National Wholesale Frozen Food Distributors Association noted in 1949, "Really, the masses have not become acquainted with frozen foods. Because of our production and distribution costs we've been mostly appealing to the people with higher incomes."⁹⁰ *Business Week* agreed with this assessment, noting in 1947 that despite booming production, frozen food could not compete with fresh or canned produce on cost, making it "far from being high-volume merchandise."⁹¹ *Fortune* magazine likewise pointed out that the "vast to-do" regarding frozen food in late 1946 was "over a line of merchandise whose total national tonnage does not yet equal that of sauerkraut and pickles."⁹² In the mid-1940s, frozen food remained essentially a high-priced luxury product, a fact recognized by Birds Eye marketing executives who placed advertisements in highbrow magazines such as the *New Yorker* as late as 1949.⁹³

Just-in-Time Distribution

Between the end of World War II and the mid-1950s, technological developments helped frozen food packers make their products fit for mass consumption. Packers and farmers perfected techniques of mass production in this period, but even more importantly the industry made a concerted effort to reduce distribution costs to bring their products within the reach of the masses. The surprisingly successful introduction of frozen concentrated orange juice in the late 1940s provided the impetus for this work, convincing frozen food packers that their products no longer needed to be marketed as luxury items. Aided by developments in

⁸⁸ "Frozen Foods: Interim Report," 180.

⁸⁹ "Frozen Foods: Slow Start to Big Boom," *Chain Store Age* (May 1954): 97.

⁹⁰ W. M. Walsh, "A Message from the President," *Annual Yearbook of Frozen Food Distribution* (1949): 9.

⁹¹ "Frozen Food Enters Selling Era," *BW*, Jan. 4, 1947, 28.

⁹² "Frozen Foods: Interim Report," 105.

⁹³ "Birds Eye Story," 103. For more on the luxury-product marketing strategy of the major packers in the 1940s, see Shane Hamilton, "The Economies and Conveniences of Modern-Day Living: Frozen Foods and Mass Marketing, 1945-1965," *Business History Review* 77 (Spring 2003): 36-42.

refrigeration technology and, especially, long-haul trucking, the frozen food industry succeeded by the mid-1950s in convincing consumers that quick-freezing could provide high-quality, convenient staple food at a reasonable price.

Packers put the mass production of frozen food into high gear immediately after the war. Seabrook Farms was at the vanguard of using industrial methods and machinery to reduce the cost of frozen food production. With over 25,000 acres of crops planted across four states—New Jersey, Maryland, Delaware, and Pennsylvania—Seabrook developed methods of coordinating the planting, harvesting, and processing of frozen vegetables that resembled military operations in their precision. In the mid-1940s, Seabrook hired agronomists and operations research specialists to implement the "heat unit" method of planning crop plantings. The heat unit provided a measure of the amount of light and heat required to bring a particular seed to maturation, allowing Seabrook's field managers to predict when a particular field of crops would be ready for harvest based on its climate and soil characteristics at the time of planting. By forecasting the date of harvest, plantings could be spread out across time and across the 25,000 acres to assure that during harvest season the freezing plant would only receive as much raw material as could be processed in one day.⁹⁴ To speed up the harvest and reduce labor requirements, Seabrook made extensive use of machines such as the Porter-Way pea harvester, which cut and loaded peas directly onto field trucks in one operation. Mechanization allowed one man to pick 200 pounds of peas in one hour in 1951, compared to 6 pounds per man-hour in 1941.⁹⁵ Two-way FM radios were installed in Seabrook's field trucks in 1946, allowing managers to direct loads of crops to the central freezing plant within four hours of harvest.⁹⁶ Upon arrival at the plant, crops entered into a highly mechanized continuous-flow production line. In 1948, for instance, Seabrook introduced the first continuous-flow asparagus packaging line that carried the vegetable from field box to finished package, eliminating a bottleneck caused by the previous need for workers to arrange spears all in one direction by hand; throughput of

⁹⁴ Seabrook, *Henry Ford of Agriculture*, 30; John Fuyume, Interview by the Author, Jun. 21, 2004, Upper Deerfield Township, NJ; "This Is Seabrook Farms," 167, 171.

⁹⁵ Frank App, "Farming Efficiency Is the Key to Lower Frozen Food Prices," *QFF* (Sep. 1951): 50.

⁹⁶ "Radio Cars to Control Harvest," *QFF* (Jul. 1946): IV [insert]; "New Two-Way Radio System Speeds up Harvest Time," *Seabrooker* (Jun. 1946): 1, 3, *The Seabrooker Clippings File*, SECC.

asparagus increased by fifty percent in the new system.⁹⁷ By 1955, Seabrook Farms was celebrated by *Life* magazine as the "biggest, best-organized vegetable factory in the world," using "the mass production adeptness usually associated with motor cars" to produce 100 million pounds of frozen vegetables and fruits.⁹⁸

But despite these refinements in mass production, frozen food might have forever remained a high-priced luxury product if not for the astounding commercial success of frozen concentrated orange juice. Invented by a group of USDA researchers at a Florida laboratory in 1945, frozen concentrated orange juice quickly became so popular among the nation's consumers that industry leaders declared it a verifiable "miracle." Minute Maid Corporation, the largest firm to take advantage of the USDA's freely available patent on frozen concentrate, achieved annual sales of nearly \$30 million by 1951—a 100-fold increase in sales just four years after introducing the product to the nation. The success of the new product resulted largely from its appeal to consumers, who found concentrated orange juice much cheaper than fresh oranges and far more consistently pleasing in flavor than canned juice. By 1952 the American Can Company undertook a survey that found frozen orange juice to be the nation's favorite breakfast drink, a staple food product that Americans of multiple income levels found to be an excellent value.⁹⁹ For many consumers, the desire for frozen orange juice was a primary incentive to purchase a home freezer or a refrigerator with a built-in freezer compartment. Between the end of the war and 1954, consumers bought over 6 million home freezers; as result, the amount of freezer space in private homes totaled approximately 80 million cubic feet—a volume almost equal to the total amount of commercial frozen storage space that had been available in warehouses prior to the war.¹⁰⁰ For the first time, millions of American shoppers owned the technology required to make repeat buying of frozen food a feasible practice. As sales of frozen

⁹⁷ "New Line Ups Production 50 Per Cent," *QFF* (Jul. 1948): 51. See also C. Courtney Seabrook, "A Farmer-Packer Takes a Look at the Frozen Food Industry," *QFF* (Feb. 1950): 126; William J. Scheffer, "Our Unique Processing Plant," *Seabrooker* (Dec. 1955): 5-6, *The Seabrooker Clippings File*, SECC.

⁹⁸ "Biggest Vegetable Factory on Earth," 41. See also William E. Giles, "Giant Vegetable Farm Plants, Picks, Packs on Factory-Like Basis," *WSJ*, May 17, 1956, 1.

⁹⁹ Shane Hamilton, "Cold Capitalism: The Political Ecology of Frozen Concentrated Orange Juice," *Agricultural History* 77 (Fall 2003): 557-65.

¹⁰⁰ Victor J. Hillery, "Frozen Foods: Packers Prepare Flood of Victuals," *WSJ*, Feb. 3, 1954, 13; "The Freezer—Rocking the Food Industry," *BW*, Mar. 28, 1953, 68.

juice mounted steadily between 1948 and the mid-1950s, leaders of the frozen food industry became fully convinced that a permanent mass market for their products had finally arrived.

Supermarket managers responded to the orange juice boom by finally jumping on the frozen food bandwagon in the early 1950s. The National Association of Food Chains surveyed 50 chain supermarket managers in 1950 and found that many of them continued to think of frozen food as too expensive to warrant investment in freezer cabinets; at the time, fully half of the chains provided no freezer space in their stores.¹⁰¹ The continuing success of frozen orange juice, however, convinced at least one national chain—Safeway Stores—to "go all out" on frozen food in 1951, when the chain installed freezers in all of its stores for the first time.¹⁰² Seeking to use frozen orange juice as a "draw" that would lure buyers in to stores on a weekly basis, retailers increasingly installed open-display or glass-cased freezers, replacing the old "coffin-type" cases that hid packages from view under an opaque lid.¹⁰³ Chain store managers who had previously shunned frozen food declared in 1953 that it had become the "'golden' item of today and the future," as supermarket sales of frozen items accounted for 3.5 percent of total food sales in that year and reached 4 percent three years later.¹⁰⁴ In 1956 the National Tea supermarket chain declared its intent to push frozen food up to 10 percent of total sales by building new stores and remodeling old ones to provide more space for freezer cabinets.¹⁰⁵ In 1949 *Business Week* had declared that the "biggest bottleneck" preventing the arrival of a mass market for frozen food was the lack of retail freezer space.¹⁰⁶ By the mid-1950s, that bottleneck had all but disappeared.

Behind supermarket acceptance of frozen food in this period was the success of frozen food packers in solving the nagging problem of distribution. In the decade following the end of World War II, packers developed a host of strategies that markedly reduced the cost of

¹⁰¹ "What Chain Stores Think about Frozen Foods," *QFF* (Mar. 1950): 65.

¹⁰² "Safeway Goes All out on Frozen Foods," *QFF* (Mar. 1951): 90. Safeway had tested frozen food sales in certain markets since 1949, but did not install freezer cabinets in all of its stores until 1951. See "Safeway Stores to Expand Frozen Food Installations," *QFF* (May 1949): 68; "Safeway Stores: Frozen Foods Titan," *QFF* (Oct. 1960): 218-30, 255-7.

¹⁰³ Max Mandell Zimmerman, *The Super Market: A Revolution in Distribution* (New York: McGraw-Hill, 1955), 148; "Reach-In Case Sells More Frozen Foods," *Progressive Grocer* (Dec. 1957): 66. The first open-display case was installed in a Stop & Shop in Quincy, Massachusetts, in 1953. See "Birds Eye Story," 95.

¹⁰⁴ "Chain Store Meeting Focuses Spotlight of Enthusiasm on Frozen Foods," *QFF* (Oct. 1953): 95; Super Market Institute, *The Super Market Industry Speaks* (Chicago: Super Market Institute, 1959), 19.

¹⁰⁵ "Why Frozen Foods Are Climbing," *Chain Store Age* (Mar. 1956): 138.

¹⁰⁶ "Comeback for Frozen Foods," *BW*, Mar. 19, 1949, 23.

distributing frozen food and consequently brought the price within the reach of "the masses." The first step to achieving economically viable nationwide distribution was to vastly increase the volume of freezer warehouse space. For the first time, firms began building warehouses dedicated specifically to frozen foods in the late 1940s. The Birds Eye division of General Foods, for instance, built a new freezer warehouse in Watertown, Massachusetts in 1948. The new facility tripled Birds Eye's storage space in New England and allowed the company to send deliveries to any retailer in the region within 24 hours.¹⁰⁷ Seabrook Farms doubled its own on-farm warehouse capacity in 1946, achieving the ability to hold 50 million pounds of food at 10°F.¹⁰⁸ Other frozen food packers and distributors built entirely new frozen-food warehouses on the West Coast and in the Midwest, extending the range of distribution throughout the country.¹⁰⁹ Meanwhile, warehousing firms that before the war had dedicated most of their cold storage space to non-frozen foods expanded and updated their facilities. Prior to the war, for example, only 30 percent of the space in Terminal Warehouse in Washington, DC, could maintain freezing temperatures. After installing new insulation and revamping its refrigeration units just after the war, the firm could store frozen food in 70 percent of its space.¹¹⁰ All of this construction brought a rapid expansion in the nation's freezer warehouse space, as volume increased by a remarkable 23 million cubic feet between 1947 and 1949.¹¹¹

The mere fact of increased warehouse space, however, did not inherently reduce the cost of distributing frozen food. In the decade following World War II, the technology of warehousing underwent a dramatic if largely invisible revolution.¹¹² The change came as a response to the high cost of storage, a problem that was especially apparent in the frozen food industry. In 1946, the *Wall Street Journal* estimated that the cost of warehousing frozen food

¹⁰⁷ "Birds Eye Opens New Warehouse," *BW*, Jun. 26, 1948, 81.

¹⁰⁸ "Giant New Cumberland Warehouse Now Complete," *Seabrooker* (Jun. 1946): 2, *The Seabrooker Clippings File*, SECC.

¹⁰⁹ "Distributor Builds Frozen Food Warehouse," *QFF* (Nov. 1948): 56, 92; "Continental Freezers Builds Warehouse to Serve Key Mid-West Markets," *QFF* (Jan. 1950): 82, 84.

¹¹⁰ George Haddock, "Frozen Foods: Billion Dollar Industry," *Nation's Business*, Jun. 1954, 61; Walter E. Bernd, "How One Multi-Story Warehouse Converted to Meet Growing Frozen Food Demand," *QFF* (Jan. 1954): 109-10.

¹¹¹ "Zero Storage Space up 23 Million Cu. Ft. since '47," *QFF* (Feb. 1951): 87.

¹¹² For the average person as well as historians of technology, the role of the warehouse in the twentieth-century economy is something of a "black box," hidden from view and therefore largely taken for granted. J. B. Jackson is to my knowledge the only scholar to write, if briefly, on the "steady flow" concept of modern warehousing in *A Sense of Place, a Sense of Time* (New Haven: Yale University Press, 1994), 173-85.

amounted to \$0.025 per pound per month.¹¹³ This may seem like a miniscule amount, but when frozen food packers computed the expense of storing several million tons at 3 cents per pound per year, the impact on price structures became dramatically apparent. Multiple factors led to such high costs. First, a frozen food warehouse was a costly structure to build, requiring investments in custom design, insulation, and refrigeration machinery. A 1968 textbook estimated that an average frozen food warehouse cost \$20 per square foot to build, exclusive of land expenses.¹¹⁴ Once constructed, a frozen food warehouse was expensive to operate, with as much as half of expenses dedicated to labor costs.¹¹⁵ But perhaps most important, frozen food warehouseers were confronted by Benjamin Franklin's famous maxim that "time is money."¹¹⁶ The longer food remained frozen in a warehouse, the more it cost. This was partly due to the expense of labor and the cost of electricity needed to run refrigeration equipment, but even more a result of the fact that a package of frozen food in storage represented tied-up capital. Not only was the stored package not earning profits for food processors in the marketplace, but its production required capital investment that accrued interest charges as it lay—quite literally a frozen asset.

The postwar revolution in warehousing was dedicated to achieving a steady flow of goods to minimize time in storage. Two key technologies lay at the heart of the new system: forklift trucks and standardized pallets, both of which were first used together on a large scale by the U.S. military during World War II. Forklifts and pallets made it possible to move and stack enormous quantities of goods at stunning speed, especially when compared to the previously widespread practice of moving irregularly shaped cartons with hand-operated two-wheeled trucks or dollies. As the Navy discovered in a 1947 study, palletized loading could allow one man to accomplish in two hours a job that would otherwise take 14 men four hours.¹¹⁷ Commercial

¹¹³ John A. McWethy, "Frozen Food Glut," *WSJ*, Dec. 3, 1946, 1.

¹¹⁴ S. O. Kaylin, *Understanding Today's Food Warehouse* (New York: Chain Store Age Books, 1968), 165.

¹¹⁵ H. Wayne Bitting, *Factors Affecting Costs of Wholesale Distribution of Frozen Foods* (Washington: USDA, Agricultural Marketing Service, 1959), 30.

¹¹⁶ On the history of time as a commodity, see E. P. Thompson, "Time, Work-Discipline, and Industrial Capitalism," *Past and Present* 38 (Dec 1967): 56-97.

¹¹⁷ Kaylin, *Understanding Today's Food Warehouse*, 52-6; "Modern Handling of Frozen Foods in Storage," *QFF* (Feb. 1948): 47-8; "Palletizing Solves Distributor's Problems," *QFF* (Jul. 1948): 42; D. O. Haynes, "Mechanized Materials Handling and the Manpower Problem," *QFF* (Mar. 1951): 93-5, 234, 236; Rick LeBlanc, "Pallet Evolved Along with Forklift: Industry's Roots Predated WWII," *Pallet Enterprise*, <<http://www.palletenterprise.com/>>

warehouseers quickly recognized the potential of palletization to reduce labor costs; with fewer workers required to move much greater quantities of goods, managers could limit their single largest category of operating expense while simultaneously minimizing the power of unions to dictate work conditions. As one distribution executive noted in 1968, "[Mechanical] equipment is never absent or temperamental and draws no fringe benefits."¹¹⁸ Palletization greatly amplified the power of an individual warehouse worker at the expense of his laid-off compatriots, but its impact on a warehouse's rate of throughput was just one part of a larger effort of mechanization. Ultimately, warehouse designers and managers hoped to reconceptualize the warehouse as a place of dynamic movement rather than "dead" space. Continuous-flow principles of assembly-line manufacturing were imported to the warehouse, with overhead or in-floor towlines and conveyor belts installed in single-story structures to move goods horizontally rather than vertically (as in older multi-story buildings).¹¹⁹ One of the best examples of the modern continuous-flow warehouse was the 7.5 million cubic foot Alford Refrigerated Warehouse constructed outside Dallas, Texas in 1949. "Keep it moving, preferably by machinery," was the motto of Fred F. Alford, who could brag that his new structure was not only the largest of its kind in the world, but was also capable of moving packages of frozen food from the "in" to the "out" dock without ever being touched by a human hand.¹²⁰

The search for efficiency in frozen food warehousing gained new urgency in 1951 when Birds Eye announced a paradigm shift in its distribution policy. For the previous two decades, Birds Eye had relied on independent wholesalers to distribute its products to retailers, but as of June 1951, the firm decided to sell as much as possible directly to supermarkets to drive down

articledatabase/view.asp?articleID=821> (Dec. 2, 2002); "Mechanized Handling of Frozen Foods," *QFF* (May 1947): 58.

¹¹⁸ Kaylin, *Understanding Today's Food Warehouse*, 63. Management's concern over the rising cost of warehouse labor was a direct result of the remarkable success of the Teamsters in organizing the nation's warehouse workers from the late 1930s through the early 1960s. Jimmy Hoffa, in fact, started his union career working in a Kroger produce warehouse in Detroit. Thaddeus Russell, *Out of the Jungle: Jimmy Hoffa and the Remaking of the American Working Class* (New York: Knopf, 2001), 17-20.

¹¹⁹ "Warehouses and Distribution Centers," *Architectural Record*, Dec. 1966, 121-5; "Industry-Wide Trend to New One-Story Warehouses," *BW*, Dec. 13, 1947, 24-5; Kaylin, *Understanding Today's Food Warehouse*, 50, 57-8. The Ford Motor Company was at the forefront of designing single-story factories to achieve continuous horizontal flow of goods; see Lindy Biggs, *The Rational Factory: Architecture, Technology, and Work in America's Age of Mass Production* (Baltimore: Johns Hopkins University Press, 1996).

¹²⁰ "Newest Texas Whopper, the Biggest Refrigerator in the World," *BW*, Oct. 8, 1949, 22-3; "'Keep It Moving' Means Efficiency," *QFF* (Jan. 1949): 62.

retail prices and drive up the volume of its sales.¹²¹ Known as "direct selling," the new approach to frozen food distribution threatened to bypass independent wholesalers both economically and literally. Economically, the independents were increasingly excluded from getting their fingers in the markup pie; whereas distributor markups prior to 1950 averaged around 30 percent, by 1954 the average wholesale markup had dropped to 16 percent since most large chain store buyers could get a cheaper price by buying directly from a processor like Birds Eye.¹²² Wholesalers were also literally bypassed in the distribution chain, as both packers and supermarkets built their own warehouses (or leased space in existing warehouses) to entirely eliminate the wholesale markup and gain control of distribution logistics.¹²³ By the mid-1950s, many independent frozen food distributors faced the choice of either accepting profitless margins or initiating their own form of direct selling.¹²⁴ One company that chose the latter option was Merchants Refrigerating in New York City, which in the mid-1950s began to style itself "a sort of United Parcel Service for the frozen food industry."¹²⁵ Rather than conceive of its warehouses as storage sites, Merchants hired a large trucking company to transform itself into a "funnel in the distribution system"—a business dedicated solely to keeping frozen food constantly moving from producers to retail display cases.¹²⁶ The new machinery of movement radically restructured time as a factor in the cost of distributing frozen food, as the traditional role of the warehouse as a place of storage was increasingly replaced by the warehouse as a place of movement.¹²⁷

¹²¹ Charles G. Mortimer, Jr., "A Statement of Birds Eye's New Distribution Policy," *QFF* (Jun. 1951): 54, 173-5. Birds Eye, along with Stokely-Van Camp's Honor Brand, had begun this trend toward direct sales in 1948 in an arrangement with a Los Angeles consortium composed of 1,300 supermarket buyers representing 16 chains. Edwin W. Williams, "From Los Angeles to Seattle," *QFF* (Jul. 1948): 35; "The Certified Grocers Operation," *QFF* (Aug. 1949): 42-3; "What's Happening in Distribution?," *QFF* (Oct. 1949): 37-9, 80, 82.

¹²² "What's Ahead for the Frozen Food Distributor," *QFF* (Mar. 1954): 77.

¹²³ Edwin W. Williams, "Frozen Foods Forum: Chains in Warehouses," *QFF* (Aug. 1954): 33; Herbert M. Thornton, "Private Space Needs 15-Ton Weekly Turnover," *QFF* (Sep. 1954): 177, 184; "FF Warehouse Included in New Safeway Depot," *QFF* (Mar. 1955): 438; "Warehouse Acts as Chains' Distribution Center to Keep Pace with Frozen Food Trends," *QFF* (Apr. 1956): 184.

¹²⁴ A third option was to encourage Congress to initiate anti-trust investigations into direct selling, as did the executive director of the National Frozen Food Distributors Association in 1959. See House Select Committee on Small Business, *Small Business Problems in Food Distribution, Part I, Volume 2, Hearings*, 86th Cong., 1st sess., Jun. 24, 25, Jul. 7-9, 1959, 320-29.

¹²⁵ "Warehouses Expand Deliveries and Services to Chains," *QFF* (Jan. 1958): 46-7, 128.

¹²⁶ "Howell Sees Permanent Role for Truckers in Direct Deal," *QFF* (Jan. 1951): 42-3; "How to 'Distribute' Frozen Foods at about 6% over Cost," *QFF* (Nov. 1952): 41-2; Edwin W. Williams, "Frozen Foods Forum: Coming Truck Deal," *QFF* (Feb. 1954): 69; "Distributor Triples as Zero Trucker and Warehouseman," *QFF* (Oct. 1959): 80, 84. "Warehouses Expand," 47.

¹²⁷ Kenneth F. Stepleton, "New Warehouse Role in a Changing Economy," *QFF* (Aug. 1959): 119, 126.

Long-haul refrigerated trucking made this new low-cost distribution system possible. With supermarkets and warehouses dedicated to high-volume, high-turnover throughput of frozen food by the mid-1950s, the speed of transportation among the nodes in the distribution network became more essential than ever before. Most important, the rationalization of frozen food distribution required a flexibility in transportation that only trucks could provide. This flexibility took two forms, one geographical and the other technological. Geographically, long-haul trucking allowed frozen food packers to mesh an increasingly decentralized mode of production with the increasingly decentralized geography of suburban consumption. Technologically, refrigerated trucks provided the ability to carefully monitor individual loads of frozen food, effectively solving the problem of spoilage that had long haunted the industry's efforts to provide consumers with a high-quality, low-cost convenience food.

Frozen food packers relied on trucking to fundamentally reshape the economic geography of production in the late 1940s and early 1950s. Prior to this period, the majority of frozen food factories were located on either the East Coast or the West Coast, primarily in New York, New Jersey, Oregon, Washington, and California.¹²⁸ Beginning in 1944, however, Birds Eye began a five-year program of building and buying plants throughout the country, moving into the rural Midwest and South [see **Map 4.1**]. The purpose of this decentralization was to minimize the risks inherent in agricultural production due to unpredictable weather conditions—to achieve, on a larger scale, C. F. Seabrook's vision of "eliminating the chance from farming." In other words, Birds Eye's managers sought to supply their factories with raw materials from "widely dispersed" sites in order to be "practically weatherproof."¹²⁹ Selection of new factory sites was far from random; Birds Eye and other major packers sought to gain access to harvests in places where the environment—including not only weather and soil conditions, but the cost of land and labor—suited the production of particular fruits and vegetables at the

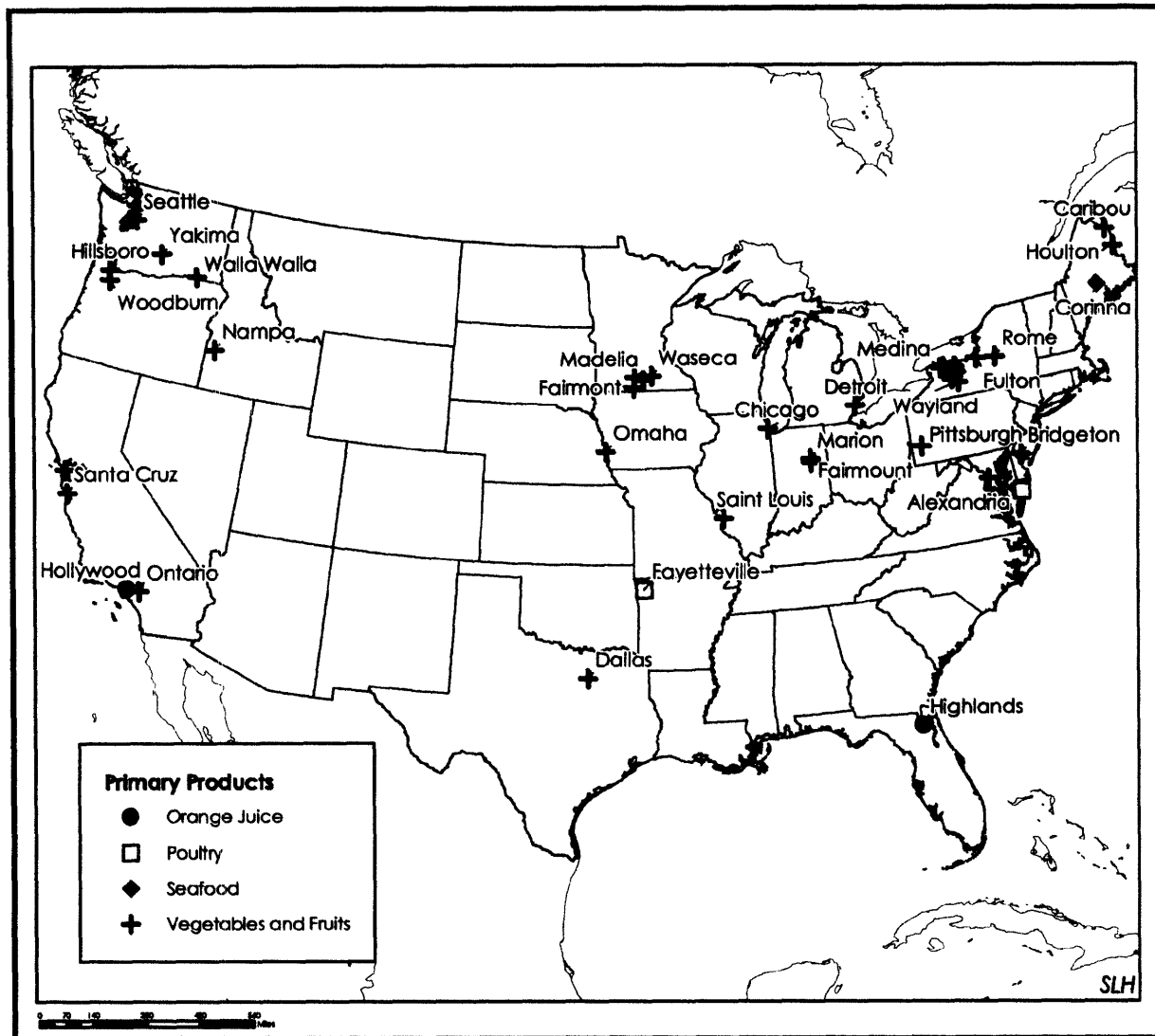
¹²⁸ See maps in Carlton, *Frozen Food Industry*, 71-3.

¹²⁹ "Frozen Foods: Interim Report," 109. See also General Foods Corporation, *Annual Report*, 1945; *ibid.*, 1948. Besides building new plants, Birds Eye continued to contract with independent growers and processors around the country for raw and finished products. Besides Seabrook Farms, these contractors included B. E. Maling in Oregon, Snider Packing in New York and Maine, Baxter and Brothers in Maine, Fairmont Canning in Minnesota (which would later be renamed Green Giant), Walla Walla Canning in Washington, Beutel Canning in Michigan, Kelley Farquhar in Washington, Cedergreen in Washington, and Durney and Son in Maryland. See "Work Sheets on Costs of Birds Eye Frozen Foods," 1941, Office of Price Administration Records, RG 188, Entry A95, Work Sheets on Costs of Birds Eye Frozen Foods, National Archives II, College Park, MD, Box 1.

lowest possible cost.¹³⁰ Furthermore, the climate and soil conditions at those sites would ideally allow harvests to fall in different times of the year so that the firm's factories could maintain a steady flow of production, allowing popular items to be marketed throughout the year, while simultaneously minimizing the time any one particular lot of frozen food had to spend in storage. Consider the example of green beans. In the 1947-48 season, packers harvest and packed beans from December through April in Florida; in Virginia in May; in Delaware, Maryland, southern New Jersey, Tennessee, and California in June and July; and in Michigan, the Pacific Northwest, and New York in July and August.¹³¹ By having factories located in some or all of these different sites, a packing firm could avoid crop failures in any one particular region. At the same time, this decentralized production would allow a firm to distribute green beans to markets throughout the year without the need for expensive long-term storage in freezer warehouses.

¹³⁰ For a map of important vegetable production regions in 1949, see Ladd Haystead and Gilbert C. Fite, *The Agricultural Regions of the United States* (Norman: University of Oklahoma Press, 1955), 73.

¹³¹ "The 1947-48 Quick Frozen Foods Production Map," *QFF* (Mar. 1947): 76.



Map 4.1: Birds Eye Frozen Food Plants, 1949

Birds Eye, like other frozen food packers, began decentralizing packing operations in 1948 in order to become "weatherproof." Sources: General Foods Corp., *Annual Report*, 1948, 1949.

In order to realize the advantages of decentralized production, however, packers had to rely on flexible transportation to move their products from producing areas to areas of consumption. One of the great economic promises of freezing food was the theoretical ability to remove perishability as a factor in distribution, allowing agricultural production to take place where and when it could be done most cheaply, yet permit placement of those goods on the

market where and when they would bring the best prices.¹³² With packers moving to decentralized production after the war, the distance between producers and consumers expanded quite dramatically, increasing the necessity for reliable long-haul transportation.¹³³ Railroads might have seemed the logical choice for long-distance transportation, since the unit cost of moving goods over distances of several hundred miles or more has always been lower for rails than for trucks, primarily because of lower fuel costs.¹³⁴ But at the same time as frozen food packers began decentralizing their production, they were also faced with an increasing decentralization of consumption as Americans and their supermarkets moved into suburbs following World War II. Furthermore, the sprawling one-story warehouses supplying these suburban centers of consumption required large plots of land, which could only be had cheaply in suburban or rural areas. This often meant the new warehouses had only highways, not rails, connecting them to their customers.¹³⁵ In the postwar geography of suburban consumption, shipping by truck became "increasingly logical" as a means of moving frozen food from rural areas of production to the suburban areas where warehousemen, supermarkets, and consumers increasingly located themselves.¹³⁶

Trucks provided the geographical flexibility of point-to-point shipping that railroads, tied to inflexible steel rails, could not. Seabrook Farms, for instance, realized the importance of flexible transportation in 1943, when it established its own trucking subsidiary, Cumberland Auto and Truck. With 22 tractor-trailers, Cumberland was able to provide overnight shipping of Seabrook products directly to any distributor or supermarket warehouse in the East Coast

¹³² Theoretically, then, frozen food should have made moot the geographical theories of Johann von Thünen, which dictated that the high degree of perishability and thus high cost of transportation would limit production of seasonal fruits and vegetables to the "inner ring" of intensive agriculture, along with dairy farms. But as economic geographers have shown, the relative cheapness and speed of transportation achieved in the mid-twentieth century allowed the Thünien rings, centered on the highly populated northeastern "Megalopolis" of Boston-New York-Baltimore, to expand all the way to the Rocky Mountains; thus, the "inner ring" of market garden production effectively stretched far into the Midwest and South. See Peter O. Muller, "Trend Surfaces of American Agricultural Patterns: A Macro-Thünian Analysis," *Economic Geography* 49 (Jul. 1973): 228-42.

¹³³ Keith O. Burr and Lawrence S. Martin, "Transportation Requirements," *QFF* (Dec. 1946): 68.

¹³⁴ The economic literature on this issue is enormous, but a quick summary can be found in Albrow Martin, *Railroads Triumphant: The Growth, Rejection, and Rebirth of a Vital American Force* (New York: Oxford University Press, 1992), 13-4.

¹³⁵ James F. McCarthy, *Highways, Trucks and New Industry: A Study of Changing Patterns in Plant Location* (Washington, DC: ATA Foundation, 1963).

¹³⁶ "Trucks Are Taking over for Frozen Food Transportation," *QFF* (Oct. 1951): 55; E. R. Wagner, "Choice of Carrier Is Decided By Market Conditions, In-Transit Rights, Time of Shipment," *QFF* (Nov. 1955): 92; Forney A. Rankin, "Inherent Advantage of Trucks & Rails Make Both Necessary for Frozen Food Movement," *QFF* (Apr. 1962): 226.

metropolitan area by the early 1950s (see **Figure 4.3**).¹³⁷ As Seabrook Farms increased its production in the late 1940s, however, it sought to expand its distribution to reach outside of the major metropolitan areas of the Northeast. As Harold Emerson, the director of Seabrook's Cumberland subsidiary, noted in 1948: "People in the smaller cities and towns are demanding frozen foods from their suppliers. In many cases the only means of getting frozen foods to these people is by the motor truck."¹³⁸ As one frozen food packer explained in 1955, "Truck lines can make deliveries to any warehouse [but] the rails can deliver only to those points that have rail sidings."¹³⁹ As **Map 4.2** illustrates, even as early as 1947 truck terminals capable of handling frozen food were located throughout areas of intensive production and of heavy consumption, as well as hundreds of points in-between. The largest number of terminals were of course located in the metropolitan centers of the Northeast and Midwest, but truckers also maintained facilities in places like Twin Falls, Idaho, and Jonesboro, Arkansas. The states with the highest ratio of terminals to population included those of the upper Midwest, Idaho, Nebraska, and Colorado—all primarily rural states where frozen food terminals would have served primarily as links between farms and small towns and cities.¹⁴⁰ As a North Dakota food processor noted in a 1963 survey, "Trucking can go anywhere. Rail can't."¹⁴¹ Geography did not dictate a shift to shipment by truck, but for frozen food packers seeking to distribute their products as widely as possible, trucks became an increasingly attractive mode of transportation despite the higher cost compared to railroads.

¹³⁷ "This Is Seabrook Farms," 188-9; Advertisement for Seabrook Farms, "A Mechanized Army Keeps 30,000 Stores Stocked with Seabrook Farms Frozen Foods," *QFF* (Nov. 1954): 140-1. Seabrook first began shipping frozen food by truck in the 1930s via the Davidson Transfer & Storage Company, but those early truck shipments, using wet ice, traveled only to Jersey City. B. D. Davidson, "Refrigerated Motor Truck Service for Frozen Foods," *Ice and Refrigeration* (Jan. 1946): 50.

¹³⁸ Harold C. Emerson, "Trucks," *QFF* (Mar. 1948): 94-5.

¹³⁹ "Whole Sun Cites Many Advantages of Shipping FF by Truck," *QFF* (Sep. 1955): 128.

¹⁴⁰ "Truck Lines & Terminals for Frozen Food Shipments," *QFF* (Nov. 1947): 56-62. The population figures used to compute the per capita relationship are from the 1950 census of population.

¹⁴¹ McCarthy, *Highways, Trucks and New Industry*, 63.

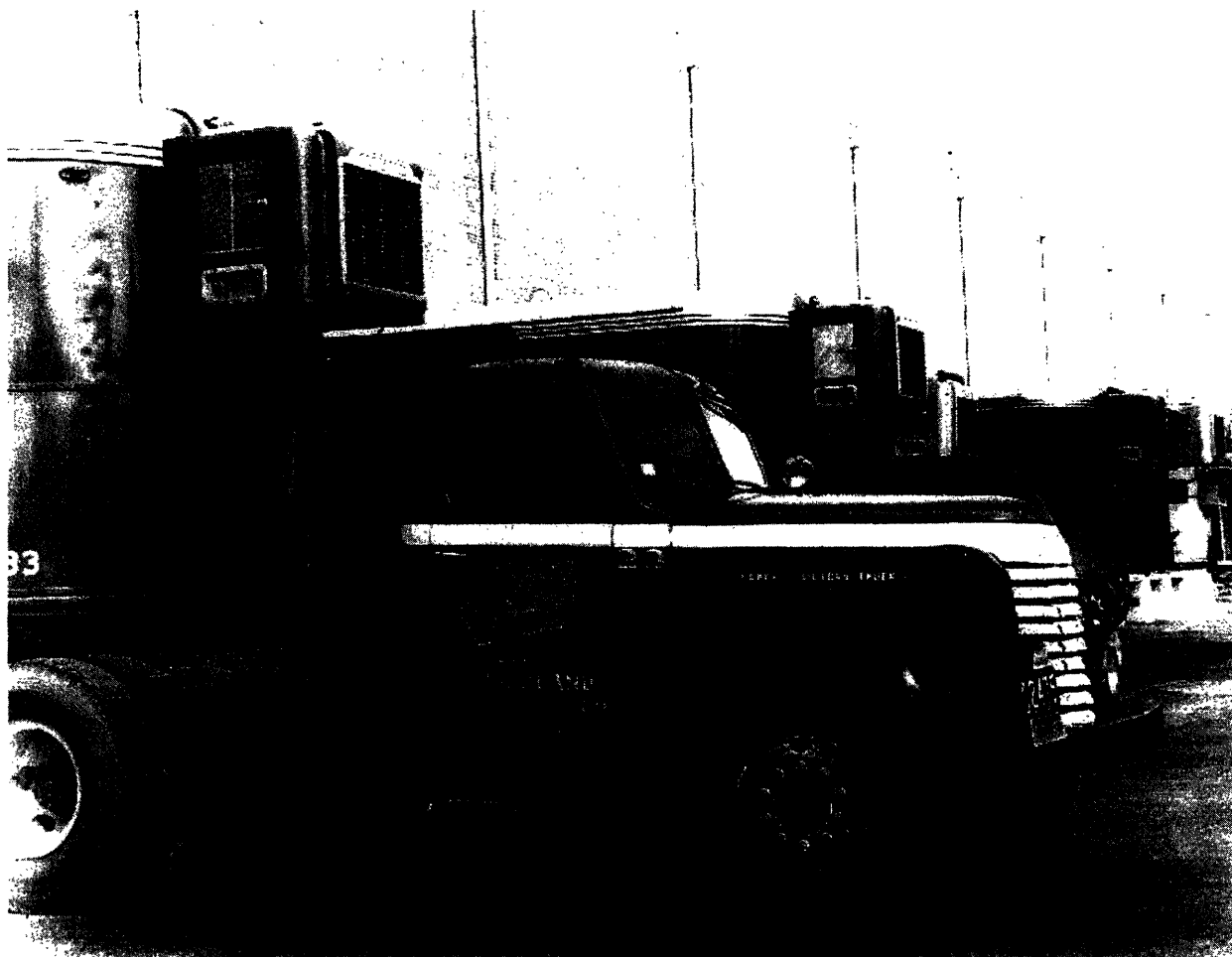
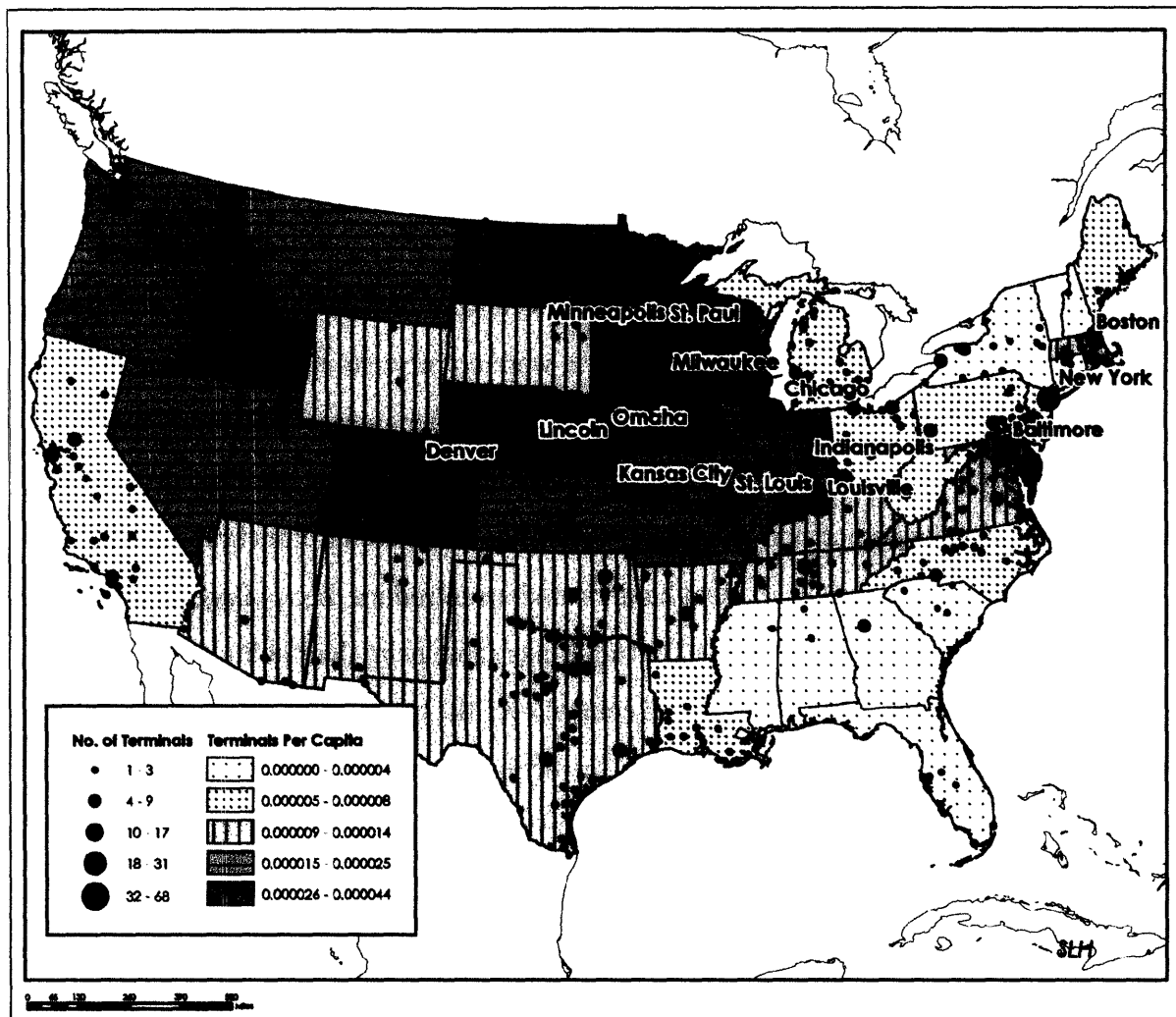


Figure 4.3: Seabrook Farms truck with reefer

Seabrook Farms established its own trucking fleet in 1943, operating as a subsidiary under the name of Cumberland Auto and Truck. By the mid-1950s when this photo was taken, the company used tractors such as this GMC Model A to haul frozen food in refrigerated trailers as far north as Maine, as far west as Illinois, and as far south as Florida. Seabrook Educational and Cultural Center photo collection.



Map 4.2: Truck Terminals for Frozen Food, 1947

Decentralization of frozen food packing facilities was made possible by the availability of truck terminals for frozen food. The majority of these terminals were located in major urban centers, but many were spread throughout rural areas where vegetables and fruits were grown for freezing, particularly in the Midwest, Tennessee, Virginia, and Texas. Sources: *QFF*, 1947; U.S. Census of Population 1950.

Trucks also provided a technological form of flexibility that proved essential for the frozen food industry to cultivate a mass market for its goods in the postwar period. At the most basic level, the technology of train transportation is founded on the idea of subsuming any one particular unit of goods (a boxcar) within a larger whole (the train and the rail network) to achieve an overall level of efficiency in movement. Trucks, however, make the unit of goods (a

trailer) into the whole, allowing truckers to provide a degree of service and speed unattainable by railroads. Though less efficient in the sense of maximizing use of energy, labor, and infrastructure, a truck is inherently more flexible in movement. Two technologies of flexibility were especially important in allowing trucking to help lower the cost of frozen food distribution after World War II: mechanical refrigeration and speed.

Mechanical refrigeration became cheap, reliable, and widely available in truck trailers in the late 1940s. "Reefers," as the devices were known, were not new; an African-American inventor named Frederick McKinley Jones had developed a mechanical refrigerator small and lightweight enough to be used in truck trailers in 1938. After establishing the Thermo King Corporation with a business partner, Jones sold thousands of his reefer units immediately before and after the war, especially to meat haulers anxious to reduce the spoilage common with the use of ice.¹⁴² The popularity of the first Thermo Kings came from their ability to provide truck drivers with an unprecedented degree of control over the temperature maintained in a trailer. Mechanical refrigerators work by forced convection of air past coils filled with compressed refrigerant; unlike ice or cold plate systems, a mechanical refrigerator does not merely absorb ambient heat but continually circulates cold air through a space. As a result, a mechanical system's degree of refrigeration is controllable and adaptable to multiple conditions (such as either cold or hot outside temperatures), whereas ice refrigerates by absorbing heat at a more or less constant rate and can only be varied in strength by changing the quantity of ice used.¹⁴³ Shippers had long recognized the theoretical advantages of mechanical refrigeration; the Pacific Fruit Growers Express company had been working on a mechanical unit to be used in railcars since the early 1930s. Until the arrival of the Thermo King, however, such efforts were

¹⁴² "Trucking Exec's Challenge Spurred 'Refrigerator on Wheels," *Transport Topics* (Jul. 5, 1997); American Society of Mechanical Engineers History and Heritage Center, "Thermo King Model C Transport Refrigeration Unit," Oct. 1, 1996, <<http://www.asme.org/history/brochures/h192.pdf>> (accessed Sep. 20, 2004); J. W. Kalmes, "Thermo-King Refrigerator Units on Trucks and Trailers," Dec. 3, 1946, International Harvester Company, Motor Truck Engineering and Product Bulletins/Reports, Wisconsin Historical Society, Madison, WI, Box 12, Folder 4. Jones received patent #2,303,857, in 1942 for his idea of putting a refrigeration unit in a truck trailer.

¹⁴³ Holroyd, "Influences and Challenges," 24-6.

impeded by the expense of constructing a unit that was simultaneously lightweight, compact, and yet able to operate reliably under the constant strain of vibration experienced in transit.¹⁴⁴

With the release of the Thermo King Model R in 1949, frozen food shippers gained the power to maintain unprecedented control over their products in transit. Prior to the Model R, Thermo Kings had been designed and used primarily to keep meat and produce in the 35° to 45° F range, not to keep frozen food near 0° F.¹⁴⁵ The Model R packed a more powerful 4-cylinder gasoline engine than previous Thermo Kings, allowing the compressor to produce extremely low temperatures. This engine was coupled to an automatic electric starter, allowing for constant operation of the unit's compressor even when the truck engine was not running (see **Figure 4.4**). Controlled by a thermostat, the electric starter allowed a steady temperature to be maintained by starting, stopping, and restarting the compressor motor as needed. As a result, the Model R could not only produce very low temperatures, but it could do so by operating its engine only when needed to achieve the desired temperature. Furthermore, the Model R incorporated a new invention by Frederick McKinley Jones—a control device that kept the unit's engine running at peak efficiency at multiple settings. With these innovations, the Model R needed only a relatively small amount of fuel to keep an entire load of frozen food at or near 0°F.¹⁴⁶ In a 1957 comparison, for instance, a group of agricultural engineers found that on a shipment of frozen food from Waseca, Minnesota, to Jersey City, New Jersey, a mechanical reefer used \$20 of fuel and maintained a steady temperature of 0°F in transit, while an iced railcar used \$214 of ice and salt with temperature spikes up to 14.6°F.¹⁴⁷ Besides offering fuel efficiency, reefers based on the Model R design provided an important form of flexibility to the owners of trucks, since they could operate not only at extremely low temperatures suitable for frozen food, but also at higher temperatures better suited to fresh produce or meat. With this

¹⁴⁴ "Transporting Frozen Foods by Truck," *QFF* (Aug. 1946): 71, 75; Douglas Albert, "Truck-Trailer Refrigeration," *Refrigerating Engineering* (Jan. 1948): 31-2; George M. Ellig, "Transportation Developments in 1947," *QFF* (Mar. 1948): 115.

¹⁴⁵ Kalmes, "Thermo-King Refrigerator Units."

¹⁴⁶ "Pre-Cooling of Perishables," *Power Wagon* (Sep. 1948): 20; Holroyd, "Influences and Challenges," 14; G. D. Albert, "Truck-Trailer Refrigeration for Frozen Foods," *QFF* (Mar. 1949): 174. Thermo King's only significant competitor was the Trail-Aire Company, which produced refrigerator units that were placed inside, rather than on the outside front, of a truck trailer.

¹⁴⁷ Russell H. Hinds, Harold D. Johnson, and Robert C. Haldeman, *A Performance Test of Refrigerated Rail Cars Transporting Frozen Foods* (Washington: USDA, Agricultural Marketing Service, 1957).

ability to haul a wide variety of goods, truckers with good reefers could more easily count on picking up a "backhaul" or return load to defray the expense of hauling frozen food on the initial trip, allowing an overall cost savings that could be passed on to the frozen food shipper. As a consequence, frozen food packers quickly found mechanical reefers to be the cheapest and most reliable form of refrigerated transportation available, especially in comparison to dry ice.¹⁴⁸ Seabrook Farms, for instance, installed 10 Thermo King Model Rs in 1950 and noticed a rapid drop in fuel and maintenance costs in its reefer trailers.¹⁴⁹

¹⁴⁸ "PIE Cites Contributing Factors that Led to Refrigeration Change," *QFF* (Apr. 1954): 141.

¹⁴⁹ Advertisement for Thermo King, "Cuts Shipping Costs for Seabrook Farms," *QFF* (Mar. 1950): 17.

NOW ... a brand **NEW**
THERMO KING
 with
SUPER CAPACITY



MODEL "R"

**GREATEST ADVANCEMENT
 IN TRUCK REFRIGERATION
 HISTORY!**

**WEIGHS UNDER
 900 lbs.**

- HEATS and COOLS
- FULLY AUTOMATIC TEMPERATURE CONTROL
- ONE PIECE, SELF-CONTAINED PACKAGE
- OCCUPIES NO PAYLOAD SPACE

REFRIGERATES FRUITS AND VEGETABLES LOADED DIRECTLY FROM FIELD . . .
 MAINTAINS SUB-ZERO TEMPERATURES FOR FROZEN FOODS . . .



Figure 4.4: Thermo King Model R

The Thermo King Model R, released in 1949, provided frozen food shippers with a compact, fully automatic form of mechanical refrigeration capable of reliably maintaining freezing temperatures. "A Brand New Thermo King with Super Capacity," *Quick Frozen Foods* (Apr. 1949): 35.

Mechanical refrigeration was cheaper and more reliable than dry ice, but even so the cost of shipping frozen food over very long distances by truck usually made rail shipment more economical. For instance, a survey of frozen food processors in 1955 found that the primary reason shippers chose rails over trucks was the simple fact that it was "cheaper"—in some cases, truck rates from West Coast factories to markets east of Chicago were as much as 62 percent

higher than rail rates.¹⁵⁰ But taking advantage of mechanical refrigeration necessitated the use of tractor-trailer transportation in the late 1940s and early 1950s, because railroads proved reluctant to adopt mechanical reefers until years later. The Fruit Growers Express Company teamed up with Frigidaire and the General Motors Corporation to deploy the first large scale fleet of 102 diesel-powered mechanical reefer railcars in 1951, but even four years later the nation's railroads had only 934 mechanical units in operation. As late as 1958, mechanical reefers represented less than 2 percent of the total number of refrigerated rail cars in use.¹⁵¹ Behind railroaders' reluctance to invest in a \$20,000 reefer car in this period lay three-quarters of a century's worth of investment in ice manufacturing and harvesting plants, all of which would become obsolete upon conversion to mechanicals.¹⁵² Many trucking firms, on the other hand, had just entered the transportation business following the war's end and saw investment in specialized reefer equipment as a means to gain customers. In 1949, for instance, while railroads had no commercially available mechanical reefers, approximately 11,000 mechanical units were installed in the nation's trucks.¹⁵³ Frozen food packers and distributors were among those customers seeking the specialized service of reefer truckers, since many had found that railcars using dry or wet ice generally had trouble reaching temperatures below 20° F. Spoilage due to melting would often more than offset the cost savings achieved by shipping by rail.¹⁵⁴ This became especially apparent to the Florida orange juice concentrate industry in 1950, when major processors such as Minute Maid, Pasco, and Snow Crop began receiving complaints about melted OJ from irate supermarket managers in the Northeast. After funding a study by USDA transportation engineers Harold D. Johnson and Walter H. Redit, the orange juice packers determined that mechanical refrigeration was necessary to avoid melting in transit.

¹⁵⁰ James R. Snitzler and Robert J. Byrne, *Interstate Trucking of Frozen Fruits and Vegetables under Agricultural Exemption* (Washington: USDA, Agricultural Marketing Service, 1959), 30.

¹⁵¹ James A. Mixon and Harold D. Johnson, "Iceboxes on Wheels," in USDA, *Yearbook of Agriculture, 1954: Marketing* (Washington: GPO, 1954), 103-4; "Mechanically Operated Reefer No Longer an 'Experiment'," 61-2; "It's about Time," *QFF* (Nov. 1955): 87; Snitzler and Byrne, *Interstate Trucking of Frozen Fruits and Vegetables*, 34.

¹⁵² Reneau, "Frozen Food Transportation and Distribution," 19.

¹⁵³ Margaret R. Purcell, *Transportation of Florida Frozen Orange Juice Concentrate: A Case Study of Carrier Competition Induced by Dynamic Industry Growth* (Washington: USDA, 1955), 21, 23; Harold E. Sweeney (Industrial Economist, Investment Counsel, Market Surveys) to William C. Crow, "The Market for Transport Refrigeration," Sep. 26, 1949, Agricultural Marketing Service Records, RG 136, Transportation and Facilities Research Division Subject Files, Entry 42, National Archives II, College Park, MD (hereafter RG 136, Entry 42), Box 5, Folder 20.

¹⁵⁴ "Truck Transportation Soars for Frozen Food Cargoes," *QFF* (Jan. 1949): 41.

Consequently, even shipments to points as far north as Chicago would best be done by trucks, since "practically all movement of frozen citrus concentrates from Florida by truck is in equipment with mechanical refrigeration."¹⁵⁵

Hauling frozen food by truck also added a human element—the driver—that made reefer trucks more flexible than iced railcars. Even with thermostatically controlled automatic compressors, reefer operation required a knowledgeable driver capable of properly loading a trailer and checking or repairing the reefer in transit. A reefer driver's responsibility for a load of frozen food began hours before picking up the shipment, in a process known as pre-cooling. Shippers expected drivers to arrive at the loading dock with their trailers cooled to temperatures below 10°F to prevent damage during loading.¹⁵⁶ The driver then supervised or assisted in the loading of the trailer by warehouse dock workers known as "lumpers," ensuring that the packages of frozen food were packed tightly to avoid heat loss but not too close to the trailer walls to allow for proper circulation of cold air.¹⁵⁷ After loading, the driver became fully responsible for the load's safe arrival. As all reefer drivers knew, even the best-designed mechanical refrigerators needed defrosting on long trips and were prone to breakdowns. "Running a reefer" required frequent stops on the road for inspection of machinery and cargo, and possibly mechanical skill to repair the unit's engine, compressor, or thermostat. Frozen food packers and distributors relied on skilled truck drivers to use "good judgment" and "correct operation of the refrigeration unit" to keep frozen food frozen in transit.¹⁵⁸ Gaining these skills often required extensive training; in 1954, two-thirds of processors and distributors reported providing reefer drivers with instructional courses in handling frozen food.¹⁵⁹ The Minute Maid Company put all of its truck drivers through a 3-month training course, while Safeway Stores showed a 17-minute film at the beginning of each summer to teach "basic refrigeration

¹⁵⁵ Walter H. Redit, et al., *Transportation of Frozen Citrus Concentrate by Railroad and Motortruck from Florida to Northern Markets* (Washington: USDA, 1951), 2, 4.

¹⁵⁶ "Keeping Cool with the Reefers," *Overdrive* (Aug. 1972): 37; "Truckers See 23% Bigger FF Haul; Pre-Cool Trailers only to 12.7°," *QFF* (Nov. 1956): 81.

¹⁵⁷ "Keeping Cool with the Reefers," 40.

¹⁵⁸ John D. Keefe and Don M. Parmelee, "Our Warehousing and Transportation System," *Seabrooker* (Jan. 1956): 5-6, *The Seabrooker Clippings File*, SECC.

¹⁵⁹ "Motor Carriers Expect to Haul 22% More Frozen Food in '54," *QFF* (Nov. 1954): 68.

principles" to drivers delivering frozen food from its warehouses to its stores.¹⁶⁰ In general, drivers were well rewarded for having the proper skills; in the late 1970s, for instance, Seabrook's truckers earned an hourly wage 30 percent higher than factory supervisors.¹⁶¹ Not all reefer drivers worked for wages; many shippers preferred to rely on independent owner-operator truckers. Owner-operators not only purchased their own refrigerated equipment, but also received a flat percentage of a load's revenue upon delivery—minus any damage claims; they therefore had a "greater sense of responsibility to the shipper" to maintain the proper temperature of frozen cargo.¹⁶² Whether run by a hired driver or an owner-operator, a reefer truck placed a human in charge of every single load of frozen food, providing a flexibility of service that railroads simply could not.

Trucks furthermore provided speed in hauling that was crucial for minimizing the time-in-transit of frozen food in the postwar distribution system. Railroads using ice cars to ship frozen foods required a "great deal of transportation time," since railcars had to be shunted to icing stations, where "they might have to be cut out of a train of cars and possibly lay over for the next freight coming through," a process that could take up to 24 hours on some lines.¹⁶³ Delays in railroad shipping caused by layovers and interchanges to add or subtract cars from the train furthermore introduced opportunities for frozen food to spoil; every moment a package of frozen food spent outside of a stationary freezer meant the possibility of lost profits for packers and distributors.¹⁶⁴ For Seabrook Farms, trucking became an especially important means of achieving speed in long-haul transit in the early 1950s, when the firm decided to differentiate its label from the products of Birds Eye and other major packers by advertising its frozen vegetables as "*fresher* because they're quick-frozen right on our farm."¹⁶⁵ Putting this marketing strategy of "freshness" into action, Seabrook expanded its distribution network in the early 1950s, supplementing its own fleet of tractor-trailers with for-hire trucking companies such as Lahn

¹⁶⁰ J. A. Podmore, "Private Fleet and Driver Education Keyed to Product Protection," *QFF* (Nov. 1953): 67; "How Safeway Stores Uses Company-Produced Driver Training Aids," *Refrigerated Transporter* (Jul. 1967): 23-4.

¹⁶¹ John Melchiorre, Transcript of Interview by William Brown, 1994, *Oral Histories of a Community*, Volume I, SECC, 11.

¹⁶² "Leased Operator Declared Most Efficient; Truck Line Plans LTL Service," *QFF* (Dec. 1957): 99.

¹⁶³ H. C. Emerson, "Developments in Transportation," *QFF* (Aug. 1951): 91.

¹⁶⁴ "Refrigerator Truck Line," *BW*, May 4, 1946, 64-5.

¹⁶⁵ Advertisement for Seabrook Farms Baby Lima Beans, "You Couldn't Grow Them Fresher in Your Own Back Yard," 1954, Ayer Proofsheets, Series 2, Box 431, Folder 2.

Transportation of Bridgeton, New Jersey, which provided direct transportation from southern New Jersey to points along the entire Atlantic Coast and into Pennsylvania and Ohio.¹⁶⁶ By 1960, Seabrook had expanded its own fleet of trucks, allowing it to ship frozen food as far west as Kansas City and as far south as Florida; for points farther west, Seabrook relied on national for-hire common carrier trucking firms.¹⁶⁷ Twenty years after establishing its own trucking company, Seabrook had become entirely reliant on the speed of trucks for shipping its products, with a management training manual noting in 1965 that "very few shipments are made in refrigerated railcars due to time limitations."¹⁶⁸

Even express railroad shipment could not compete with trucks in terms of speedy service. If railroads sent an express shipment direct from factory to warehouse, shippers were precluded from partially unloading along the way to hedge their bets on prices in various markets. For instance, a shipper of a carload of frozen orange juice from Florida to Boston might wish to sell part of the load in Baltimore and New York to help defray the cost of shipping.¹⁶⁹ Only trucking could simultaneously provide both speed and flexibility, particularly by offering the option of "less-than-truckload" shipping to processors and distributors. Truckers providing LTL service, as it was known in the transportation industry, would consolidate relatively small loads from multiple shippers into one trailer, then deliver those loads to one or more destinations. Railroads offered a similar service, known as "less-than-carload" or LCL shipping, but generally charged a much stiffer rate than truckers because of the inconvenience of creating customized loading and routing schedules. Truckers, tied neither to fixed steel rails nor to pre-established schedules, could use LTL service as a relatively easy way to lure customers away from rail shipping.¹⁷⁰ This service was especially valuable to warehouse managers seeking to reduce operating costs by keeping inventories at a minimum. Both LTL service and full truckload shipments—which in 1949 averaged 24,000 pounds versus a railcar's standard capacity of 36,000 pounds—allowed warehousemen to achieve the goal of constant turnover of

¹⁶⁶ "This Is Seabrook Farms," 174; John Fuyume, Interview by the Author, Jun. 21, 2004, Upper Deerfield Township, NJ.

¹⁶⁷ "Our 'Over the Road' Operations," *Seabrooker* (Oct. 1960): 5-6, *The Seabrooker Clippings File*, SECC; John D. Keefe, "Our Transportation Department," *Seabrooker* (Aug. 1958): 5-6, *The Seabrooker Clippings File*, SECC.

¹⁶⁸ Seabrook Farms Co., "Data on Operations," May 1, 1965, Artifacts File, SECC, John Melchiorre Folder, 4.

¹⁶⁹ "Truck Transportation Soars for Frozen Food Cargoes," *QFF* (Jan. 1949): 41.

¹⁷⁰ George M. Ellig, "Transportation—Your Link with Your Customers: Part I," *QFF* (Aug. 1947): 64-6.

frozen food by limiting the amount of product that arrived and departed on any particular day.¹⁷¹ By being a loosely coupled technological system, trucking provided point-to-point service with minimal delays. For the drivers of those trucks, of course, achieving just-in-time distribution demanded "the fortitude to run anywhere at any time on a moment's notice."¹⁷² Although in theory the storability of frozen food should have eliminated time as a factor in distribution, the very real cost of time in storage and transportation dictated otherwise.

By the mid-1950s, the integration of long-haul reefer trucking and modern warehousing significantly reduced the cost of frozen food distribution. In 1953, truckers using mechanical refrigeration hauled the great majority of frozen food—72 percent of all shipments by volume.¹⁷³ Four years later, when that percentage had risen to 77.7 percent, an industry observer noted that "the only proper way [to distribute frozen foods] is in a refrigerated truck."¹⁷⁴ Trucking tied together a distribution system characterized by decentralized mass production, low-margin direct selling to suburban supermarkets, and minimal time in transit and storage. The combination allowed frozen food packers to achieve reliable profits by selling high volumes on thin margins. As a result, frozen food finally became price-competitive with canned food in the early 1950s. In 1953, for the first time in history, an average package of frozen peas could be purchased for less than a comparable can of peas.¹⁷⁵ The reduction in price was a direct result of the new distribution system; as one commentator declared in 1954, "It may not be generally known that the total cost of packing, storing and shipping a dozen of 10 oz. frozen food is approximately 24¢ per dozen less than for a similar item of canned goods."¹⁷⁶ The flexible technology of the postwar frozen food marketing machine made mass marketing possible.

Improved distribution not only brought lower prices, but helped convince consumers that frozen food was a good value. Through the 1930s and during the shakeout of "fly-by-

¹⁷¹ Alan F. Keenan, "Long Haul Refrigerated Motor Carrier Transportation," *QFF* (Nov. 1948): 70-2; Bitting, *Factors Affecting Costs of Wholesale Distribution*, 15-17, 39; "Truck Transportation Soars for Frozen Food Cargoes," *QFF* (Jan. 1949): 42.

¹⁷² "Keeping Cool with the Reefers," 36.

¹⁷³ "Motor Carriers Haul 72% of Frozen Food Output," *QFF* (Nov. 1953): 63, 109-10.

¹⁷⁴ "Motor Carriers Haul 77.7% of Frozen Food Shipments," *QFF* (Dec. 1957): 128; Louis Woehl, "More Attention Should Be Paid to Trucking Equipment," *Frozen Food Factbook* (1957): 23.

¹⁷⁵ "Frozen Peas Today as Cheap—Often Cheaper than Canned," *QFF* (Mar. 1953): 105.

¹⁷⁶ Hubert F. Sandoz, "It Costs Less to Pack Frozen Foods than the Equivalent Canned Goods!" *Frozen Food Factbook* (1954): 29. Emphasis in original.

nighters" in 1946-47, frozen food packers had faced considerable resistance from consumers who associated quick-freezing with spoilage, often with good reason. By shifting to a distribution system based on speedy movement, reliable refrigeration, and constant supervision, packers were able to change many consumers' minds about the quality of the product. From 1949 to 1956, consumer purchases of frozen food expanded dramatically, accounting for \$2 billion or 3.93 percent of total food store sales in the latter year, having risen from \$496,000,000 or 1.43 percent of total food sales in 1949. Frozen food outpaced the sales growth of all other food items in this period.¹⁷⁷ This increased consumption came at the expense of fresh and canned fruits and vegetables. Although overall consumption of fruits and vegetables dropped in the period, consumption of frozen produce increased by a remarkable 170 percent. Especially popular were peas, green beans, lima beans, asparagus, and spinach, as well as orange juice concentrate—hardly luxury foods.¹⁷⁸ Advertisements of the period proclaimed frozen food to be "fresher than fresh," offering consumers a convenient and nutritious product at a low price.¹⁷⁹ Improvements in distribution had made such claims more than just empty rhetoric.

The Political Economy of Convenience

The cultivation of a mass market in the mid-1950s signaled an important shift, as packages of frozen food quickly took on a political importance that had been absent during the industry's first two decades. Economists and policymakers at the United States Department of Agriculture (USDA) became increasingly attracted to the idea that quick-freezing could solve surplus problems in the fresh produce economy. As a consequence, the USDA provided engineering, scientific, and economic expertise to the frozen food industry, particularly working on fine-tuning the operation of the trucking-based distribution system. As policymakers saw it, frozen food could not only provide convenience to consumers, but could also provide a form of

¹⁷⁷ "Frozen Food Share of Grocery Store Sales, 1949-1956," *Frozen Food Factbook* (1958).

¹⁷⁸ "Frozen Fruits, Vegetables Usage Continues Post-War Uptrend," *QFF* (Sep. 1957): 107-8; "Per Capita Consumption Comparison," *Frozen Food Factbook* (1957): 91.

¹⁷⁹ Hamilton, "Economies and Conveniences," 42-53.

political-economic convenience by converting one inflection of the "farm problem" into an industrial problem.

Mass consumption of frozen food in the 1950s was based not only on the low prices brought by rationalized distribution, but also on consumer acceptance of frozen food as convenience food. Frozen food had been marketed as a luxury good for so many years that, as late as 1952, a *Woman's Home Companion* survey could find that 36 percent of respondents did not buy frozen food because they thought it was "too expensive."¹⁸⁰ Nonetheless, marketers increasingly found consumers "more than willing to pay extra" for frozen food that provided consistent flavor and required only minimal preparation time.¹⁸¹ As one frozen food marketer put it in 1957: "Mama buys frozen foods not because they are cheaper but because of their superior taste, quality, and convenience."¹⁸² And the new frozen food items marketed in the 1950s were convenient, as a string of products followed in the wake of frozen orange juice concentrate to capitalize on consumer demand for simple foods that could be easily prepared. Birds Eye unveiled the "fish stick" in 1951 after seven years of research and development to assure consumer acceptance. The work paid off, as consumption of fish sticks rose from 7 million pounds in 1953 to 44 million pounds a year later, almost overnight creating "a whole new market of fish eaters."¹⁸³ Pot pies, TV dinners, french fries, and pizzas all achieved similar instant success in the mass market over the next four years. Sales of potatoes for use in frozen french fries, for example, increased 1,800 percent between 1946 and 1956, driven largely by the rise of the McDonald's fast food chain—the most recognizable symbol of Americans' desire for convenience food in the period.¹⁸⁴ Although modern historians may scoff at french fries and fish sticks as examples of consumers being duped by corporate marketers, evidence suggests that consumers understood such foods to be truly convenient. Especially among working-class families in which women held full-time jobs, consumers who bought frozen food such as pot pies

¹⁸⁰ "Trends in the Use of Frozen Foods by U.S. Housewives," *QFF* (Mar. 1952): 110.

¹⁸¹ Charles W. Lubin, "It's Easy to Get Your Price for Quality," *Frozen Food Factbook* (1958): 27; "Quality and Convenience Lead in Impelling FF Purchases," *QFF* (Oct. 1954): 39.

¹⁸² George Egger, "Quality Is the Key to Further Expansion of Frozen Food Sales," *Frozen Food Factbook* (1957): 29.

¹⁸³ "Fish Sticks Score with All-'Round Convenience," *QFF* (Sep. 1953): 81-2; "1955 Frozen Foods Almanac," *QFF* (Mar. 1955): 173; "Birds Eye Story," 91.

¹⁸⁴ Victor J. Hillery, "Frozen Foods: Packers Prepare Flood of Victuals," *WSJ*, Feb. 3, 1954, 1; "French Fries Sales Climb 1,800% in Ten Years with 40% Going to Institutional Markets," *QFF* (Oct. 1957): 97-100; Eric Schlosser, *Fast Food Nation: The Dark Side of the All-American Meal* (Boston: Houghton Mifflin, 2001), 111-31.

or TV dinners generally did so because they appreciated the speed of preparation and believed that freezing provided the most nutrition and flavor for the money.¹⁸⁵ For instance, a 1957 marketing survey of Birmingham, Alabama steelworker families by a local newspaper found that working-class purchases of frozen food were increasing at a much faster rate than purchases by higher-income groups.¹⁸⁶

The greatest convenience factor of frozen food, however, may have been its potential to restructure the political economy of food in the 1950s. When consumers bought frozen food for its convenience, they helped push pricing decisions "downstream" in the agro-food economy. That is, the power to determine prices paid to farmers and by consumers became increasingly lodged in the hands of food processors and supermarket managers, rather than "upstream" in the collected decisions of individual farmers as to how much food they would produce in any given year. Even if consumers believed frozen food to be a good value, there was no question that consumers paid for "the convenience of having some of the work of food preparation transferred to the factory." In 1939, the value added to the food economy by manufacturing amounted to \$3.5 billion; by 1954, that amount had risen to \$13.5 billion. Even after adjustment for inflation, consumers paid an additional \$4 billion per year for convenience in the latter year, prompting two agricultural economists to observe that "it is obvious that our food does cost more."¹⁸⁷ But because consumers proved quite willing to pay for convenience—which they apparently saw as a legitimate increase in value—there was no sustained political protest from consumer groups about the fairness of price or the problem of monopoly in frozen food as occurred in the milk and beef industries. Furthermore, the farmers who provided the raw materials that allowed frozen food packers and supermarkets to profit from the manufacture of convenience never took political action against the increasingly "downstream" economy. Because frozen food packers bought agricultural products in large volumes and on contract, farmers apparently appreciated the security of selling their produce at a fixed, guaranteed

¹⁸⁵ Daniel B. Levine, *Consumers Appraise Canned and Frozen Foods, Their Packages and Labels in Atlanta, Kansas City, and San Francisco* (Washington: USDA, Agricultural Marketing Service, 1958); "No End to Prepared Foods Climb as New Sales Patterns Emerge," *QFF* (Oct. 1957): 35, 156.

¹⁸⁶ "Frozen Fruits, Vegetables Widen Sales Base among Lower Income Groups," *QFF* (Mar. 1957): 44.

¹⁸⁷ Boggs and Rasmussen, "Modern Food Processing," 428.

price.¹⁸⁸ Quick freezing would consequently appear to agricultural policymakers in the 1950s to be an ideal solution to one version of the "farm problem," simultaneously bringing high prices to produce farmers and high value to consumers without the need for significant state intervention in either production or marketing decisions.

The upshot of this was that in the 1950s the U.S. Department of Agriculture cooperated closely with frozen food packers to consolidate their power in the food economy, but to understand how the state first became enrolled in the frozen food project requires further explication. After all, the USDA's mandate as a government agency was to help farmers—not food processors—achieve their economic goals. At one level, the USDA's interest in frozen foods in the 1950s derived from its goal of helping farmers, particularly produce growers, solve their surplus problem. Economist S. R. Smith, director of the Fruit and Vegetable Branch of the USDA's Production and Marketing Administration, explained the surplus problem of fresh fruit and vegetable production to the House Agriculture Committee in a lengthy 1946 memorandum.¹⁸⁹ Surpluses in fruit and vegetable production resulted primarily from the unpredictability inherent in both seasonal production and seasonal marketing. Most produce farmers, constrained by climate, could only grow vegetables and fruits at particular times of year; furthermore, the extreme perishability of fresh produce forced them to sell within a relatively tight time window after harvest. Farmers could not predict at the time of planting how the weather would turn out that year, and consequently had relatively little control over either the size or the timing of their harvests. As Smith recognized, even the most favorable weather conditions could lead to disastrous prices for farmers selling their produce on an open market, since a bumper crop of perishables arriving all at once in any particular market could not be stored until a time when a better price might be had. Individual farmers were often forced to

¹⁸⁸ Ibid., 429.

¹⁸⁹ S. R. Smith, USDA Production and Marketing Administration, Fruit and Vegetable Branch, "Improving the Marketing of Fruits and Vegetables," Jan. 18, 1946, Agricultural Marketing Service Records, RG 136, Entry 52, Office of the Administrator Deputy Administrator's Correspondence Subject File, 1940-58, National Archives II, College Park, MD (hereafter RG 136, Entry 52), Box 13. The memorandum was intended as a policy primer for the committee members considering H.R. 5496, which if it had been enacted would have amended the Agricultural Marketing Act of 1937 to make it easier for the USDA to administer marketing orders in the fruit and vegetable industries. House Committee on Agriculture, *Marketing Agreements and Orders, Hearings*, 79th Cong., 2d sess., Apr. 3, May 3, 1946.

accept prices below the cost of production. The same process could also work in reverse, creating shortages which would bring unacceptably high prices to consumers.¹⁹⁰

The surplus problem was exacerbated, as Smith's memo further explained, by the chaotic methods used to market fresh produce throughout the country. Unlike grains, fresh fruits and vegetables were neither fungible nor storable, making it impossible to stabilize prices through the buying and selling of futures at a large central exchange like the Chicago Board of Trade. Instead, prices for fresh produce were set by millions of individual buyers and sellers, bargaining at widely scattered points throughout the country over distinct lots of merchandise. This geographical scattering, combined with the perishability of produce, meant that even when surpluses existed in any particular produce market, scarcities might occur simultaneously elsewhere. In short, the fresh produce economy was atomistic and chaotic, and thus an intractable policy problem for agricultural economists such as S. R. Smith, who strongly recommended in 1946 that Congress pursue a legislative strategy for helping produce growers develop a "program of coordinated action" to rationalize the marketing of perishables.¹⁹¹ At the same time, Smith recognized that a Republican-controlled Congress was unlikely to view with favor any highly statist policies, such as marketing agreements modeled on the New Deal solution to the milk problem. As Smith put it, "Government programs cannot take the place of efforts on the part of farmers, shippers, processors, wholesalers, retailers, and other handlers in devising and adopting better marketing practices."¹⁹²

The USDA had made various efforts to help fresh produce growers devise a long-term solution to the surplus problem in the 1930s and 1940s. The first significant effort came with the amendment of the Agricultural Marketing Agreement Act in 1937, which enabled fruit and vegetable growers to develop methods of "orderly marketing" based on the model of the dairy industry; in other words, to cooperatively establish quotas for how much of any one commodity

¹⁹⁰ Smith, "Improving the Marketing," 6. The problem of unpredictability was especially apparent to citrus growers, since it took four years after planting for an orange tree to produce marketable fruit; farmers might thus have expanded their orchards during times of high prices only to find their first harvest occurring during a price-dampening glut. See Ray A. Goldberg, *Agribusiness Coordination: A Systems Approach to the Wheat, Soybean, and Florida Orange Economies* (Boston: Harvard Business School, 1968), 152.

¹⁹¹ Smith, "Improving the Marketing," 4-6, 12-16. On the Chicago Board of Trade as a privately regulated market center providing stability in grain pricing, see Cronon, *Nature's Metropolis*, 97-147.

¹⁹² Smith, "Improving the Marketing," 13.

could be marketed in any particular season to prevent flooding of markets and keep producer prices high. But as we have seen in the case of the milk marketing agreements, the establishment of quotas required significant cooperation among producers to abide by the agreements. If even a small group of farmers refused to abide by the quotas, the entire system would fail. In the dairy industry, a relatively small and geographically concentrated group of "inner-ring" farmers were able to use the power granted by the state-sanctioned marketing agreements to achieve relative success in stabilizing production. In fresh produce agriculture, however, such organization was significantly hampered by the atomistic nature of the industry, composed of millions of small farmers spread out all over the country. Although various fruit and vegetable groups attempted to implement marketing orders after passage of the 1937 Marketing Agreement Act, nearly all of the attempts soon collapsed, so that by 1946 only citrus fruit growers—led by the powerful California Fruit Growers Exchange (Sunkist)—had an effective agreement.¹⁹³

In 1944 agricultural economist H. S. Kahle proposed a radically different, though unsuccessful, approach to the surplus problem in fresh produce marketing. As a statistical analyst in the USDA's War Food Administration, Kahle observed that stabilizing prices for perishable fruits and vegetables was hampered by the fact that they were "seasonally produced in concentrated areas." Surpluses of potatoes, for instance, did not occur across the entire country at one time, but occurred only in Maine during the some harvest seasons. The War Food Administration had consequently been unable to devise a nationwide policy of surplus reduction, and had instead relied on localized direct government purchases to boost farm prices during seasonal gluts. Kahle proposed a less statist approach, which he called a "transportation indemnity," which he believed could effectively stabilize farm incomes without raising the price of perishables for consumers. By paying a transportation credit to farmers or shippers of surplus produce in a particular region, Kahle argued, the cost of shipping perishables over long distances could be reduced enough to justify transporting produce from a glutted market to a

¹⁹³ Ibid., 10. On the challenges posed by atomistic agriculture to cooperative marketing—in this case, of the California raisin industry—see Victoria Saker Woeste, *The Farmer's Benevolent Trust: Law and Agricultural Cooperation in Industrial America, 1865-1945* (Chapel Hill: University of North Carolina Press, 1998). On the California Fruit Growers Exchange, see Ron Tobey and Charles Weatherell, "The Citrus Industry and the Revolution of Corporate Capitalism in Southern California, 1887-1944," *California History* 74 (Spring 1995): 6-21.

place of scarcity. If shipping costs were subsidized in this way, Kahle reasoned, consumers in New York might be able to buy green beans from the deep South in April at the same price they would pay for locally grown beans in June. Given the high elasticity of demand for fresh produce, especially among lower-income groups, such seasonal reductions in price would enable consumers to spend more overall money on produce through the year, without raising the retail price for any individual buyer. Farm incomes would remain steady, even during periods of highly localized "flash surplus," through the relatively simple administrative mechanism of providing shippers instant transportation credits. But as Kahle recognized, the elegance of the plan was counterbalanced by two major flaws; namely, that it would require the government to make direct cash outlays at unpredictable times and of unknowable amounts, and that it furthermore had the potential to drive many food processors out of business by making fresh produce available at low prices throughout the year. Combined with the fact that Kahle was a low-level bureaucrat with no previous policymaking experience, the transportation indemnity proposal never reached Congress, dying quietly in the hands of his direct superior in the War Food Administration, Frederick V. Waugh.¹⁹⁴

From an agricultural policy perspective, quick-freezing provided an almost magical solution to the surplus problem in produce marketing. The industry's recent success in cultivating a mass market made real the possibility of stabilized prices for both consumers and farmers without government economic regulations—whether marketing orders or transportation indemnities. The "miracle" of frozen orange juice concentrate drove this point forcefully home to agricultural policymakers. This was because the frozen orange juice boom not only created a whole new market for firms like Minute Maid, but also quite dramatically solved a daunting surplus problem in the postwar Florida orange industry. In the early 1940s, generous income tax laws had encouraged Florida orange growers to expand their orchards. By 1947, these expanded groves were producing so much fruit that growers were unable to sell them at prices high enough to cover the cost of shipping to northern markets. The successful commercialization in 1948 of the process for concentrating and freezing orange juice arrived at a

¹⁹⁴ H. S. Kahle to F. V. Waugh, "Proposal for Transportation Indemnity Program as a Mechanism for Price Support and Surplus Removal," Dec. 7, 1944, RG 136, Entry 52, Box 1.

fortuitous moment. Quick freezing not only allowed firms like Minute Maid to buy up surplus oranges and convert them into storable commodities which could be sold throughout the year, but also created an entirely new product that consumers almost literally could not get enough of. By the mid-1950s, expanding demand for frozen orange juice seemed to have permanently eliminated the surplus problem in the Florida orange industry.¹⁹⁵

Secretary of Agriculture Ezra Taft Benson, the great promoter of "free enterprise" in agriculture, was one of the most avid supporters of quick-freezing as a solution to the surplus problem.¹⁹⁶ Speaking to a group of frozen food industry leaders in 1954, Benson congratulated them on their "spectacular achievements" in "revolutioniz[ing] the marketing of oranges." As Benson saw it, quick-freezing replaced seasonal marketing of perishable commodities with "year-around markets for products in essentially fresh form." As the frozen orange juice example took hold among other fruits and vegetables, Benson predicted the achievement of "real stability of prices of so many highly perishable foods which traditionally sold for a song when the markets were glutted at harvest time."¹⁹⁷ Such a statement may seem inconsequential in terms of agricultural policy goals, given its context as a laudatory speech at an industry banquet, but this was exactly the point. Benson's speech was not a statement of a new governmental approach to the surplus problem, but a pat on the frozen food industry's back for taking care of the problem themselves, without the need for government regulation of production or marketing. Benson literally showed his appreciation by presenting a certificate of achievement to Charles G. Mortimer, president of General Foods Corporation.¹⁹⁸ But Benson offered more than just a plaque to the frozen food industry. As he continued his speech, Benson explained his faith in government research in science and technology, when undertaken "in close cooperation" with industry, to achieve the surplus-reducing goals of New Deal-era agricultural policies—without the policies. In particular, Benson offered to the frozen food industry the services of agricultural engineers and scientists working on improved methods for "processing, transportation,

¹⁹⁵ Hamilton, "Cold Capitalism," 565-6.

¹⁹⁶ On Benson, see Chapter 1.

¹⁹⁷ Ezra Taft Benson, "Research Results in Progress," Address at a dinner in honor of the 25th Anniversary Celebration of the Founding of the Frozen Food Industry, Washington, DC, Apr. 13, 1954, USDA History Collection, National Agricultural Library, Special Collections, Beltsville, MD, Box 1.3/15, Folder B3. See also "Benson Sees Boon to Nation in Atom," *NYT*, Apr. 14, 1954, 43.

¹⁹⁸ "Benson Sees Boon," 43.

distribution, and storage of frozen foods."¹⁹⁹ As Benson saw it, state-funded research on specific technological problems of the frozen food industry could create not only higher farm incomes, but also industrial stability.²⁰⁰

Benson's speech merely crystallized and intensified the USDA's ongoing commitment to technological research intended to benefit the frozen food industry in its search for an efficient marketing machine. Fifteen years before Benson became Secretary of Agriculture, the Department had begun research on grading produce for use in freezing. Horace Campbell, assistant to Dutch Diehl at the USDA Frozen Pack Laboratory, was a key figure searching for "objective" methods to determine grades of raw materials in the late 1930s.²⁰¹ Objective grades, as Campbell understood, would allow farmers to quickly negotiate prices with packers for their fruits and vegetables. Grades were even more important for packers, however, who saw them as essential tools for predicting and controlling raw material costs.²⁰² Campbell's first efforts to find objective standards focused on peas, the most popular frozen vegetable in 1938. Campbell tested a variety of methods that he hoped might replace "organoleptic" tests—subjective measures of flavor and texture determined by smelling, touching, and tasting the peas—with methods that could be reliably reproduced in diverse contexts. Tests included floating raw peas in water tanks to measure their specific gravity, measurement of pea size and juice volume per unit weight, and chemical analyses of sugar content.²⁰³ None of these quantifiable measures could be correlated, however, to human perceptions of taste, texture, and juiciness after the freezing process.

¹⁹⁹ Benson, "Research Results in Progress."

²⁰⁰ Benson's thinking was thus of a piece with the "corporate commonwealth" approach to political economy espoused by the Dwight Eisenhower Administration in the 1950s. Robert Griffith, "Dwight D. Eisenhower and the Corporate Commonwealth," *American Historical Review* 87 (Feb 1982): 87-122.

²⁰¹ On the role of scientists, technologists, and their machines as arbiters of "objectivity" in politics and business, see Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Press, 1995); M. Norton Wise, ed., *The Values of Precision* (Princeton: Princeton University Press, 1995).

²⁰² USDA Bureau of Chemistry and Soils, Food Research Division, Report on Research Line Project b-1-3-5, "Chemistry of Peas, Preserved by Freezing, as Related to Variations in Maturity, Harvesting, Handling, and Processing," Mar. 31, 1938, Records of the Western Regional Research Center, Box 1, Folder 3; USDA Bureau of Chemistry and Soils, Food Research Division, "Quarterly Report, Supplementary Statement," Mar. 31, 1938, *ibid.*

²⁰³ USDA Bureau of Chemistry and Soils, Food Research Division, Report on Research Line Project b-1-3-5, "Chemistry of Peas, Preserved by Freezing, as Related to Variations in Maturity, Harvesting, Handling, and Processing," Sep. 30, 1938, *ibid.*, Box 1, Folder 2.

Success came with a device called a "tenderometer," which provided a quantifiable measure of pea quality by recording a pea's resistance to pressure. As of May 1939, Campbell's work resulted in the USDA promulgating tentative frozen pea grades.²⁰⁴ Frozen snap beans followed in 1944, then apricots and rhubarb in 1945. Other popular frozen foods did not receive official grades until the 1950s, with broccoli grades announced in 1950 and lima beans in 1953.²⁰⁵ But even after the grades went public, many packers refused to acknowledge them, preferring their own in-house grades. This was partly because an in-house grade of, say, "Honor Brand Fancy, Grade A" could be used as a marketing tool to distinguish an Honor Brand package from a less well-known packer. It was also because the USDA grades focused on determining the price a farmer could expect for his raw peas, rather than the flavor a consumer might experience upon cooking the frozen peas.²⁰⁶ In the 1950s, the USDA continued its tradition of providing voluntary grades "to serve as a basis of sales transactions," but also stepped up its efforts to provide on-site inspection and grading, for a fee, to packers seeking to stamp their frozen packages with the "U.S. Grade A, Fancy" label. In both situations—creating grades for raw materials and standards for finished products—the government's policy was "to develop and revise standards in close cooperation with the industry."²⁰⁷ A tight relationship already existed between the state and the industry by the time Ezra Taft Benson called for additional cooperative research into the science and technology of marketing frozen food.

After Benson's call, a large part of the USDA's work on the frozen food marketing machine focused on maintaining the flexibility of trucking in the distribution system. Despite having largely surmounted the distribution problem by the mid-1950s, frozen food packers called on the USDA to help them smooth the functioning of the marketing machine by doing technical research and policy work on truck transportation. One problem that the industry found particularly vexing in the mid-1950s was a disjunction that many packers perceived

²⁰⁴ USDA Food Research Division, Seattle, "Annual Report for the Fiscal Year 1939: Research Project b-1-3-5," Jun. 29, 1939, Records of the Western Regional Research Center, Box 1, Folder 9.

²⁰⁵ "U. S. Frozen Food Grades," *Frozen Food Factbook* (1954): 69.

²⁰⁶ "Frozen Food Squeeze," *BW*, Feb. 22, 1947, 70, 72; Paul M. Williams to Raymond P. Melhart, Sep. 26, 1941, Records of the Western Regional Research Center, Box 9, Commodity Processing Folder.

²⁰⁷ Leonard S. Fenn, "An Explanation of the USDA Grading Program," *QFF* (Feb. 1952): 57; Advertisement for Prime Froz-n, "Your Double Assurance...They *Have* to Be GOOD!" *Frozen Food Factbook* (1954): 1. See also "How Federal Inspection Works," *QFF* (Feb. 1947): 65; Dennis T. Avery, "A Day with a Fruit & Vegetable Inspector," *QFF* (Sep. 1964): 43, 170.

between the theoretical advantages and the actual practice of using mechanically refrigerated long-haul trucking. The geographical and technological flexibility of trucking made just-in-time distribution possible, but it also meant that frozen food shippers had to choose among thousands of trucking firms with thousands of different standards for equipment and service. In a series of annual surveys of packers and distributors in the 1950s, the trade journal *Quick Frozen Foods* uncovered a persistent dissatisfaction among some shippers regarding truckers. Complaints abounded of truckers who overloaded or did not properly pre-cool their trailers, or ran reefers with insufficient insulation, underpowered compressors, or poor circulation setups. All of these factors could cause spoilage, cutting into profits and potentially causing consumers to return to canned or fresh produce.²⁰⁸ As frozen french fry packer F. Gilbert Lamb noted in 1957, there was little point in advertising "such strong talking points as convenience and economy unless the industry can guarantee delivery of quality products to the consumer."²⁰⁹

What the newly mature frozen food industry needed most in 1957, argued Lamb, was a set of objective and reliable standards for transportation equipment. Such standards, ideally expressed in a single quantitative measure such as the British Thermal Unit, would allow shippers of frozen food to know exactly what level of refrigerated service they were paying for when they hired one trucking firm over any other.²¹⁰ As Lamb and other frozen food packers realized, however, finding such a standard would require expensive and time-consuming road tests of thousands of possible reefer-trailer configurations. This was where the USDA proved useful, particularly in the person of Harold D. Johnson. As an agricultural engineer specializing in refrigerated transportation with the USDA's Agricultural Marketing Service, Johnson had been working since 1948 on a project to develop "exact knowledge as to desirable refrigerated trailer characteristics and operating standards" for frozen food transportation.²¹¹ In the early 1950s Johnson stepped up his efforts in this regard after receiving multiple requests from frozen

²⁰⁸ "Motor Carriers Haul 72% of Frozen Food Output," *QFF* (Nov. 1953): 63, 109-10; "Truckers See 23% Bigger FF Haul; Pre-Cool Trailers only to 12.7°," *QFF* (Nov. 1956): 81;

²⁰⁹ F. Gilbert Lamb, "Let's Stress Quality in Frozen Foods," *Frozen Food Factbook* (1957): 13. As an interesting aside, Lamb was the inventor of the Lamb Water Gun Knife, a device that used a giant water hose to shoot potatoes through a steel grid to create perfectly shaped french fries, a key technology in the development of the french fry industry. See Schlosser, *Fast Food Nation*, 130.

²¹⁰ Lamb, "Let's Stress Quality," 51, 53.

²¹¹ John B. Hulse, "Trailers," *QFF* (Mar. 1948): 95.

food industry representatives to do so, both through the mail and at the annual conferences of the National Association of Frozen Food Packers which he regularly attended.²¹² Cooperating closely with the National Bureau of Standards and the Truck-Trailer Manufacturers Association, Johnson sought standard rating of reefers as a tool to help the frozen food industry navigate through the "great flexibility and diversity of the motor carrier industry itself," with its "many different types and sizes of equipment used in such diverse ways and under such a variety of conditions."²¹³ Johnson coordinated the running of hundreds of refrigerated truck trailers through two rigorous series of road tests in 1957. Unlike the in-plant tests performed by trailer manufacturers such as Fruehauf Trailers, the new rating system emerged from measures of refrigeration capacities under actual conditions of use—in multiple weather conditions, on a variety of road surfaces, and at varying speeds of travel.²¹⁴ These factors were important since the movement of air and engine exhaust around the outside of the trailer, along with the amount of sunshine on any given day, or even the reflectivity of the road surface, could all have significant influences on a reefer's ability to keep frozen food at desired temperatures.²¹⁵ Johnson, along with C. W. Phillips of the National Bureau of Standards, released the resulting standards in 1959. The new rating system immediately gained widespread use, and was credited by frozen food industry leaders as a significant method for assuring the delivery of high-quality products.²¹⁶

Spurring the search for standard trailer ratings in 1957 was the release of a report by USDA researchers that radically altered the way shippers thought about the way frozen food moved through the distribution system. The results of the "Time-Temperature-Tolerance" (TTT) study were first made public in 1957 by food technologists W. B. Van Arsdel and M. J. Copley, directors of the project. These USDA scientists worked at the Western Regional Research

²¹² John B. Hulse to Harold D. Johnson, Feb. 12, 1952, RG 136, Entry 42, Box 5, Folder 20; "Trailer Refrigeration Costs Studied by TTMA Task Force," *QFF* (Aug. 1955): 119; Harold D. Johnson, "Tests Show Truck Warmup Remains Major Roadblock to FF Hauling," *QFF* (Jan. 1957): 430.

²¹³ Harold D. Johnson, "Work on Reefer Standardization Pushed forward on Several Fronts," *QFF* (Feb. 1956): 428.

²¹⁴ John B. Hulse, "New Reefer Trailer Standards Will Guide Truck Manufacturers, FF Shippers," *QFF* (Dec. 1957): 95-6, 103.

²¹⁵ "First FF Trailer Ratings Via New Method Slated for April at Budd Co., Philadelphia," *QFF* (Apr. 1959): 150.

²¹⁶ "First FF Trailer Ratings," 150; Sterling P. Doughty, "'Task Force 1957' Is Answer to Industry's Handling Problems," *Frozen Food Factbook* (1958): 13; "Standardized Ratings of Truck Refrigeration Units Will Ease Estimation of Requirements," *QFF* (Mar. 1964): 253-60.

Laboratory (WRRL) at Albany, California, which in 1940 had absorbed Dutch Diehl's Frozen Pack Laboratory.²¹⁷ The TTT study first began in 1949 on the request of the USDA's Cold Storage Research Advisory Committee, the group of prominent frozen food and refrigerated warehouse businessmen that vetted relevant USDA projects undertaken with Research and Marketing Act funds.²¹⁸ At the time, the frozen food industry had not yet overcome the distribution problem, and wanted USDA scientists and engineers to find out exactly what it was that made it so difficult to distribute frozen food without spoilage. Ideally, the Advisory Committee wanted the USDA's researchers to define "tolerable variations" in frozen food temperature that would allow shippers to improve distribution strategies without having to invest in expensive new technologies.²¹⁹ In seeking to define these "tolerable variations," researchers at the WRRL spent "substantial amounts of money" over the next decade, putting over 50,000 packages of frozen food through a wide variety of refrigeration conditions like those that might be expected to occur in the real world of refrigerated trailers and warehouses. The tests were carried out in a "battery of test rooms" specially designed to expose packages to blasts of cold air constantly fluctuating in temperature. Upon emerging from the test room, the food was removed from its package and tested for loss of ascorbic acid, degradation of chlorophyll content, as well as subjected to organoleptic tests of taste, color, and odor to determine the degree of quality deterioration caused by deviations in temperature while in storage.²²⁰

When M. J. Copley presented the results of the Time-Temperature-Tolerance study eight years later, the industry heard essentially the exact opposite of what they had hoped the studies

²¹⁷ Wallace B. Van Arsdell, Michael Joseph Copley, and Robert L. Olson, *Quality and Stability of Frozen Foods: Time, Temperature Tolerance and Its Significance* (New York: Wiley-Interscience, 1969), 1-10; H. C. Diehl, "Research Activities in Freezing Preservation, 1940," Jan. 17, 1941, Records of the Western Regional Research Center, Box 4, Folder 4. On the establishment of the Regional Research Laboratories, see Mark R. Finlay, "The Industrial Utilization of Farm Products and By-Products: The USDA Regional Research Laboratories," *Agricultural History* 64 (Spring 1990): 41-52.

²¹⁸ Western Regional Research Laboratory Director's Newsletter, Feb. 4, 1949, Records of the Western Regional Research Center, Box 22.

²¹⁹ W. B. Van Arsdell, "The Time-Temperature Tolerance of Frozen Foods: I. Introduction—The Problem and the Attack," *Food Technology* (Jan. 1957): 28.

²²⁰ *Ibid.*, 30-2; J. R. Matchett to C. F. Speh, "Short Statements on Lines of Work to Be Pursued in FY 1950 under RMA Projects at the Western Regional Research Laboratory," Apr. 12, 1949, Records of the Western Regional Research Center, Box 15, Pending RMA Contracts Folder; W. B. Van Arsdell, "Frozen Food Temperature Tolerance Studies," Western Utilization Research Branch Notes from the Director, Jul. 2, 1954, Records of the Western Regional Research Center, Box 22.

would find.²²¹ Rather than establishing "tolerable variations," the TTT study showed that frozen food had to be kept at 0°F at all times—not just upon departing the plant or upon arrival at a retailer's cabinet, but at all points in the distribution process. As Copley and his audience at the 1957 National Frozen Food Industry convention well understood, however, even the most careful handling of frozen food was likely to introduce the packages to some fluctuations in temperature between plant and retail cabinet. The question then was how much fluctuation was permissible, but the answer that Copley and Van Arsdel had found was ... not much.²²² As Van Arsdel later put it, "frozen foods have a memory for adverse experience," meaning that even minor temperature fluctuations had a summing effect as they occurred over time, leading to substantially reduced storage life even after the product was placed in a 0°F environment.²²³ Furthermore, the quality loss induced by fluctuating temperatures displayed a distressing pattern of exponential increase; at 5°F the quality loss was twice that experienced at 0°F, at 10°F the loss was four times that at 0°F, and so on.²²⁴ For the frozen food industry, the TTT study implied that the distribution problem had not in fact been fully solved. Within a few years, the industry would enroll the USDA once again to iron out this new wrinkle—an issue to which we will return below. First, however, we need to examine one major exception to the rule—illustrated by the creation of frozen food grades and trailer standards and the TTT project—that the USDA generally placed its scientific and technological expertise in the service of an industry seeking to fine-tune its marketing machinery, hoping to navigate the narrow path between flexibility and lack of control over distribution.

The USDA's interest in developing a smoothly functioning marketing machine for frozen food did not always align precisely with the interests of the industry. This became particularly apparent in 1956-57 in a bizarre legal-ontological debate over whether a chicken, once frozen,

²²¹ It took so long for the TTT results to be made public because the Cold Storage Advisory Committee, upon reviewing initial data, understood that the results would have far-reaching (and expensive) impacts on frozen food distribution practices. Members of the Committee hoped that the data had been corrupted by poor quality samples, so would not allow the WRRL researchers to publish their results until more data had been gathered on a much larger sample of raw materials. W. B. Van Arsdel, "Temperature Tolerance Studies," Western Regional Research Laboratory Notes from the Director, Jun. 13, 1952, Records of the Western Regional Research Center, Box 22.

²²² M. J. Copley, "Keeping Frozen Foods at Zero All the Time Best Assurance of Consumer Satisfaction," *QFF* (Feb. 1957): 177.

²²³ Arsdel, "Time-Temperature Tolerance," 32.

²²⁴ USDA, Agricultural Research Service, *Protect Frozen Foods from Temperature Damage* (Albany: Western Utilization Research and Development Division, 1957).

was nonetheless still a chicken. The chicken quandary arose after a series of court cases in the mid-1950s in which the USDA's legal team in the Solicitor's Office struggled with the Interstate Commerce Commission (ICC) to broaden the definition of which agricultural commodities should be considered exempt from regulation under the 1935 Motor Carrier Act (MCA). As explained in Chapter 1, the USDA's efforts to broaden the "exemption clause" of the MCA were based on a decades-long effort to increase the flexibility of long-haul trucking by allowing small, decentralized trucking firms to haul agricultural commodities to and from anywhere, at rates of their own choosing, without first receiving authority from the ICC to do so. In the case of frozen food, the USDA's legal team came to believe in the mid-1950s that if truckers hauling frozen goods were exempt from ICC regulation, they would be able to provide geographically flexible service that would benefit both farmers and processors. As Mark L. Keith of the Farm Bureau Cooperative Association stated the farmers' interest in exemption in 1957, farmers selling perishable products to frozen food packers required "complete flexibility of truck service ... so that trucks [can] move from producing areas to any market dictated by the 'unpredictable' forces of supply and demand."²²⁵ In other words, farmers wanted trucks to be available on short notice to haul produce to whichever processor was offering the best price at any particular moment. For regulated truckers who were not exempt from ICC regulations, this was often not possible, since they might not have the ICC-sanctioned operating authority to haul loads to or from certain states.

Some processors, meanwhile, had also sought help from the USDA to make the transportation of frozen food exempt from ICC regulation. Like farmers, some frozen food packers saw the geographical flexibility of exempt trucking as a way to minimize the risks of selling semi-perishable goods in an unpredictable market. For instance, in the early 1950s a group of Florida orange juice processors called on the USDA to help them solve a growing transportation crisis. Few Florida processors had access to sufficient, locally available cold storage warehouse space at the time, meaning that packers often had to search far and wide for a warehouse capable of storing cans of orange juice during busy processing seasons. Furthermore,

²²⁵ "Exemption Debate Moves Forward as Farm Groups Plan Own Study," *QFF* (Aug. 1957): 131.

even when the juice processors were able to ship their products directly up the coast to the major consuming centers of the Northeast, they generally found that truckers did not have operating authorities that would allow them to bring back a cost-reducing backhaul of, say, meat or dairy products. Both of these situations could be easily fixed, the processors told the USDA's legal team in 1953, if the truck transportation of frozen orange juice were exempted from ICC regulation, allowing truckers to haul OJ to any available warehouse space without going through the expensive and time-consuming process of receiving additional geographic operating authority from the ICC.²²⁶ In this particular case, the USDA's legal team successfully petitioned the ICC to grant temporary authority to eight Florida trucking firms to haul frozen orange juice. At the same time, the USDA hoped to find a more permanent expansion of trucking services available to frozen food processors.

The desire of farmers and some processors to make frozen food exempt from ICC regulations was restrained by a 1951 decision by the Interstate Commerce Commission, known as the "Determinations" decision. In the decision, the ICC established a list of products that it had determined to be "unmanufactured," and therefore within the scope of the agricultural exemption of the MCA. The list explicitly omitted frozen food, meaning that truckers wishing to haul frozen products had to receive appropriate operating authorities from the ICC. The decision was heavily influenced by pressure from a lobby group, the Refrigerated Carriers Association, formed in 1949. Composed of large firms who had previously received authority from the ICC to haul frozen food, including Mathews Trucking, Safeway Truck Lines, Barnes Frozen Food Express, and Refrigerated Transport, the lobby group sought to convince the ICC that unregulated carriers should be explicitly forbidden from hauling frozen food, since their "inferior equipment standards ... often result in a serious deterioration of perishable foods in transit" and were thus harmful to the public interest.²²⁷ The Department of Agriculture took the opposite position during the hearings, using testimony of agricultural scientists and economists to argue that processes such as freezing were intended only to transform raw agricultural

²²⁶ Purcell, *Transportation of Florida Frozen Orange Juice*, 8, 31, 33, 37-8; "Asks Truckers for 'Greater Efficiency'," *QFF* (Apr. 1953): 160.

²²⁷ Excerpt from *Traffic World*, "Refrigerated Truck Lines Form New Association," Nov. 5, 1949, RG 136, Entry 42, Box 5, Folder 20.

commodities into marketable form, not to make them into "manufactured products."²²⁸ In declaring frozen food to be a "manufactured" food product in the Determinations case, however, the ICC followed its historical pattern of siding with the large, regulated common carriers rather than with the USDA or the smaller, exempt trucking firms.²²⁹

Following the decision, the USDA's legal team began working to overturn the Determinations decision by injecting the question of whether frozen food was "manufactured" into the regular court system. Two opportunities to do so arose in 1955 and 1956, one involving frozen chicken and the other involving frozen fruits and vegetables. The chicken debate began when Frozen Food Express, a regulated trucking company based in Texas, sued the ICC in Federal District Court over the Determinations case, which the firm claimed deprived it of the right to haul frozen poultry to and from all points within the United States. The Secretary of Agriculture immediately signed on to the case as an intervening plaintiff, seeing an opportunity to broaden the agricultural exemption to include frozen food. The Federal District Court for the Southern District of Texas decided against the plaintiffs in 1955, but Frozen Food Express and the USDA appealed the decision, bringing it before the Supreme Court in the spring of 1956. In the hearings before Supreme Court, the USDA relied on expert testimony from agricultural economists who stated that a frozen chicken maintained a "continuing substantial identity" with an unfrozen chicken. In simpler words, if a frozen chicken still looked like a chicken, it was still a chicken. Because the chicken had not taken on a new name or identity through the process of freezing in the way that, say, a sheet of raw steel became an automobile, the chicken was not "manufactured" and thus should be exempt from ICC regulation. Perhaps surprisingly, the Supreme Court agreed with the USDA, stating that "A chicken that has been killed and dressed is still a chicken.... We cannot conclude that this processing which merely makes the chicken marketable turns it into a 'manufactured' commodity."²³⁰ This decision was soon made applicable to nearly all frozen foods in November 1956, when the Supreme Court affirmed a

²²⁸ Celia Sperling, *The Agricultural Exemption in Interstate Trucking: A Legislative and Judicial History* (Washington: USDA, Agricultural Marketing Service, 1957), 27-8.

²²⁹ See Chapter 1.

²³⁰ Sperling, *Agricultural Exemption*, 34-6; *American East Texas Motor Freight Lines, Inc. v. Frozen Food Express*, 351 U.S. 49 (1956), HR2.

lower court decision that had granted the Home Transfer and Storage trucking firm the right to haul frozen fruits and vegetables without first receiving ICC authority.²³¹

As a consequence of these two cases, the ICC declared all frozen food to be exempt from MCA regulations in late 1956. One year later, over half of all frozen food shippers began relying on exempt truckers to haul their products. Flexibility was the key reason these shippers switched to exempt carriers, particularly to gain the advantages of less-than-truckload shipping.²³² As explained above, LTL shipping provided frozen food packers and distributors the ability to break up loads into smaller lots to minimize warehousing and deliver to multiple sites. Many regulated common carriers—including both trucking and railroad firms—were unwilling to carry LTL (LCL, on rails) freight. In order to offer LTL/LCL service on a large scale required a transportation firm to invest in expensive freight terminals and load-switching systems that would allow firms to assemble full loads out of partial shipments. Without extensive terminal networks, a transportation firm's only other way to provide LTL/LCL service was to accept half-empty trailers or cars—a sure way to lose money.²³³ For instance, Trans-American—a major regulated common carrier trucking firm—noted in 1957 that LTL operations required a "large investment" but brought only a "doubtful return."²³⁴ Before the Supreme Court declared frozen food an exempt agricultural commodity in 1957, some frozen food packers found it so difficult to get LTL service at reasonable rates that they bought their own tractor-trailer fleets. One example was Chun King, a northern Minnesota packer of frozen chow mein. Despite the increasing popularity of chow mein in the mid-1950s, Chun King could not sell the item to stores or distributors in full truckload quantities (24,000 pounds or more), and so needed the flexibility of LTL in order to ship smaller lots to many locations. In the days before exemption, Chun King found it cheaper to assemble its own fleet of tractor-trailers rather than pay the high rates charged by regulated common carriers.²³⁵ Once frozen food was declared exempt, however, shippers generally found that there was "no problem" finding trucking firms willing to carry LTL

²³¹ *Home Transfer & Storage Co. v. United States*, 141 F. Supp. 599 (1956); Sperling, *Agricultural Exemption*, 36-7; Neil Olmsted, "ICC Indecision Seen Forcing Fight to Widen Exempt Product List," *QFF* (Nov. 1956): 78.

²³² "Motor Carriers Haul 77.7% of Frozen Food Shipments," *QFF* (Dec. 1957): 128.

²³³ William G. Mitchell, "Do Packers Really Want LTL Shipment Service?" *QFF* (Nov. 1956): 80, 90-1.

²³⁴ "Leased Operator Declared Most Efficient; Truck Line Plans LTL Service," *QFF* (Dec. 1957): 99.

²³⁵ "Contract Farm Network, Trailer Fleet Help Chun King to Build up Sales," *QFF* (Aug. 1954): 94; see also "Packers, Motor Carriers Map Inter-Industry Plan of Action," *QFF* (Nov. 1955): 94

shipments at reasonable rates.²³⁶ Exemption had flooded the transportation market with competitors; smaller trucking companies or individual owner-operators previously shut out from hauling frozen food were suddenly able to compete with the larger firms, and often found that offering LTL service at low rates was the surest way to get more business.²³⁷

The cost of shipping frozen food dropped rapidly in response to the exemption decision. Two USDA economists, James Snitzler and Robert Byrne, found that in the two years following exemption, motor carrier rates on frozen food shipment dropped by 19 percent overall, and up to 36 percent on certain frozen items, even as railroad rates rose from 6 to 14 percent. Furthermore, many of the processors the economists interviewed found that truckers were providing more flexible service than ever before.²³⁸ John D. Keefe, traffic manager at Seabrook Farms, especially appreciated "the greater flexibility of the exempt hauler's operation" since Keefe had to "correlate one month's production with 12 months' distribution."²³⁹ Exempt haulers, as Keefe understood, were often more willing to arrive when and where they were needed than were larger common carriers. Truckers who hauled only exempt commodities did not need ICC authority to operate in certain geographical areas; the larger common carrier firms did, meaning that even though they could also haul exempt commodities to and from anywhere, they were less likely to be willing to do so for fear of not having the proper authority to pick up a backhaul at the destination. The National Association of Frozen Food Packers recognized this issue at its 1957 convention, where it passed a resolution calling on the ICC to grant regulated truckers statewide authorities rather than point-to-point route authorities in order to give them "the flexibility of service which is available to exempt motor truckers."²⁴⁰

But even as some packers came to appreciate the flexibility of exempt hauling in 1957, others saw the potential for disaster. Ray V. Harron, traffic manager at Birds Eye, countered John D. Keefe's assertion that exempt haulers provided more flexible service with his own assertion that regulated carriers provided better equipment. As a general rule, the regulated carriers were larger firms with greater financial stability, able to invest in the latest refrigeration

²³⁶ "FF Shipping Costs Drop Sharp 5.6% in 1958, but Will Rise in 1959," *QFF* (Dec. 1958): 30.

²³⁷ Snitzler and Byrne, *Interstate Trucking of Frozen Fruits and Vegetables*, 2.

²³⁸ *Ibid.*, 1, 50.

²³⁹ "Effects of Agricultural Exemption Debated by Packers and Carriers," *QFF* (Feb. 1957): 163.

²⁴⁰ "NAFFP Favors Exemption Redefinition 'If and When' Legislation is Introduced," *QFF* (Feb. 1957): 163.

equipment.²⁴¹ This sentiment was echoed by Philip Hertz of Federated Truck Lines of Chicago, a regulated common carrier, who maintained that exempt haulers could only provide cheap rates by using cheap equipment. Furthermore, even if exempt haulers could travel to and from anywhere at any particular time, they generally could not do so on a regular basis since "most exempt carriers today own only one tractor and trailer."²⁴² The findings of Snitzler and Byrne's 1958 survey of exempt hauling of frozen food offered some evidence for these views. For instance, the two economists found that the primary reason processors reported for not using exempt truckers in 1957 was the lack of available trucks.²⁴³ Furthermore, some exempt truckers used equipment that was clearly unsuited for frozen food; five percent of exempt truckers used trailers that had less than two inches of insulation, whereas the industry-wide standard required a minimum six inches.²⁴⁴ Frozen food packers wanted flexible distribution, but they did not want to sacrifice control over their products to achieve it.

By 1958 several large packers had decided that exemption had gone too far. Led by Birds Eye, Welch's Grape Juice, and Stokely-Van Camp, frozen food packers joined up with the ICC and regulated common carriers to petition Congress to amend the Motor Carrier Act to exclude frozen food from the exemption clause.²⁴⁵ Ironically, one of the common carriers joining in the effort was Frozen Food Express—the firm which had initiated the court case that led to the Supreme Court's definition of a frozen chicken as a non-manufactured chicken. Apparently the firm's Chairman of the Board, Cyrus B. Weller, had found that a year's worth of exemption had brought too much competition into the field of frozen food hauling. Whereas Frozen Food Express had previously argued that a frozen chicken was not manufactured, in testifying before Congress Weller argued that "Frozen fruits and vegetables are not farm commodities. They are the products of a substantially centralized, highly competitive industry characterized by large commercial firms." As Weller and the ICC saw it, this meant they were manufactured and should

²⁴¹ "Effects of Agricultural Exemption Debated," 163.

²⁴² Philip Hertz, "Know-How of Certified Truckers Gives FF Superior Protection," *QFF* (Aug. 1957): 31, 142.

²⁴³ Snitzler and Byrne, *Interstate Trucking of Frozen Fruits and Vegetables*, 30.

²⁴⁴ *Ibid.*, 70-1.

²⁴⁵ John W. Burks (Assistant General Traffic Manager, Welch Grape Juice Co.) to J. C. Winter, Jan. 11, 1957, RG 136, Entry 42, Box 2, Folder 15.

not be exempt.²⁴⁶ The USDA, meanwhile, reiterated its assertion that freezing was merely a means of converting a raw agricultural product into a more marketable form. Furthermore, as Secretary of Agriculture Ezra Taft Benson wrote to Oren Harris, chair of the House Committee on Interstate and Foreign Commerce, "The exemption presently in effect provides flexibility and economy in the movement of agricultural commodities."²⁴⁷ The exemption for frozen food benefited the public interest both by providing the flexibility in transportation demanded by industry and agriculture, while also providing the low cost food demanded by consumers. USDA economist George A. Dice expanded on Benson's statement, drawing on the research of the USDA economists Snitzler and Byrne to show that exemption reduced the cost of transportation and was greatly appreciated by packing firms such as Seabrook Farms.²⁴⁸ Nonetheless, with the two largest frozen food packers (Birds Eye and Stokely-Van Camp) calling for an end to the exemption, the passage of an amendment to the Motor Carrier Act was almost inevitable.

The amendment came as part of the Transportation Act of 1958, which proclaimed frozen food to be ineligible under the agricultural exemption clause of the MCA of 1935. It was the first and only setback for the USDA's efforts to broaden the exemption clause in the service of flexibility. The episode demonstrated above all else that "flexibility" was itself a flexible term with multiple valences. For the USDA's economists and legal team, flexibility primarily represented a high degree of competition in the transportation industries, characterized by thousands of small firms unfettered by ICC restrictions on rates or geographic mobility. Frozen food packers found significant drawbacks to the system, however, after experiencing this kind of flexibility for a year and a half. Although they appreciated the lower rates, faster service, and unrestricted point-to-point delivery of deregulated trucking, some also found that "flexibility" entailed reliance on carriers who often used ineffective refrigeration equipment and were likely to go out of business at any moment. In defeating the exemption effort, the frozen food industry essentially brought the USDA's marketing economists in line with their agricultural engineers and scientists, who had been working all along to bring higher standards to the technology of

²⁴⁶ House Committee on Interstate and Foreign Commerce, *Interstate Commerce Act: Agricultural Exemptions*, Hearings, Apr. 23-25, 1958, 85th Cong., 2d sess., 288. The Chairman of the ICC reiterated the views expressed in the *Determinations* case; *ibid.*, 6-18.

²⁴⁷ *Ibid.*, 4.

²⁴⁸ *Ibid.*, 18-41. John D. Keefe also testified against the proposed amendments to the MCA; *ibid.*, 378-9.

frozen food distribution. The industry effectively enrolled the USDA's expertise by the end of the 1950s to negotiate the fine line between flexibility and control, with control emerging the winner.

In the long term, the close cooperation between the USDA and the frozen food industry on the marketing machine produced an ironic result. In the mid-1950s the industry had brought the USDA on board by touting the possibility of a rationalized distribution of agricultural commodities, a system that would not only benefit farmers by eradicating the surplus problem but also benefit consumers by providing a high-quality, low-cost convenience food. By the mid-1960s, however, the industry became increasingly reliant on more complex and expensive distribution machinery, encouraged by the Time-Temperature-Tolerance work of the WRRL as well as the trailer-rating standards pushed by Harold D. Johnson. In combination with other factors, the increasing cost of distributing frozen food brought a shift away from the goal of mass marketing low-price staple foods, towards a new goal of maximizing the profits of convenience.

The first indications of this shift came in a 1957 Senate report on monopoly in the nation's industries. Examining data from the 1957 Census of Manufacturing, the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee reported that more than half of the total shipments of frozen vegetables were made by the four largest firms. In contrast, only 28 percent of total shipments of canned vegetables were made by the four largest firms, a relatively low degree of economic concentration that held true in most other food industries. In fact, the study found that the frozen food industry in 1957 was more monopolistic than the meatpacking industry, in which the four largest firms sent only 39 percent of total shipments.²⁴⁹ The number of firms processing frozen food declined by more than half between 1946 and 1957, from 450 to 215.²⁵⁰ This increasing concentration was partly a result of the "shakeout" of smaller firms that had occurred in the wake of the 1947-48 season of overproduction, but also came as certain powerful firms bought out their competitors. Minute Maid, for instance, bought Snow Crop in 1954, the same year that Stokely-Van Camp acquired PictSweet. Six years later, Minute Maid was in turn purchased by Coca-Cola. Seabrook Farms was bought in 1959 by Seeman Brothers,

²⁴⁹ Senate Committee on the Judiciary, *Concentration in American Industry*, Committee Print, 85th Cong., 1st sess., 1957, 42, 64, 41.

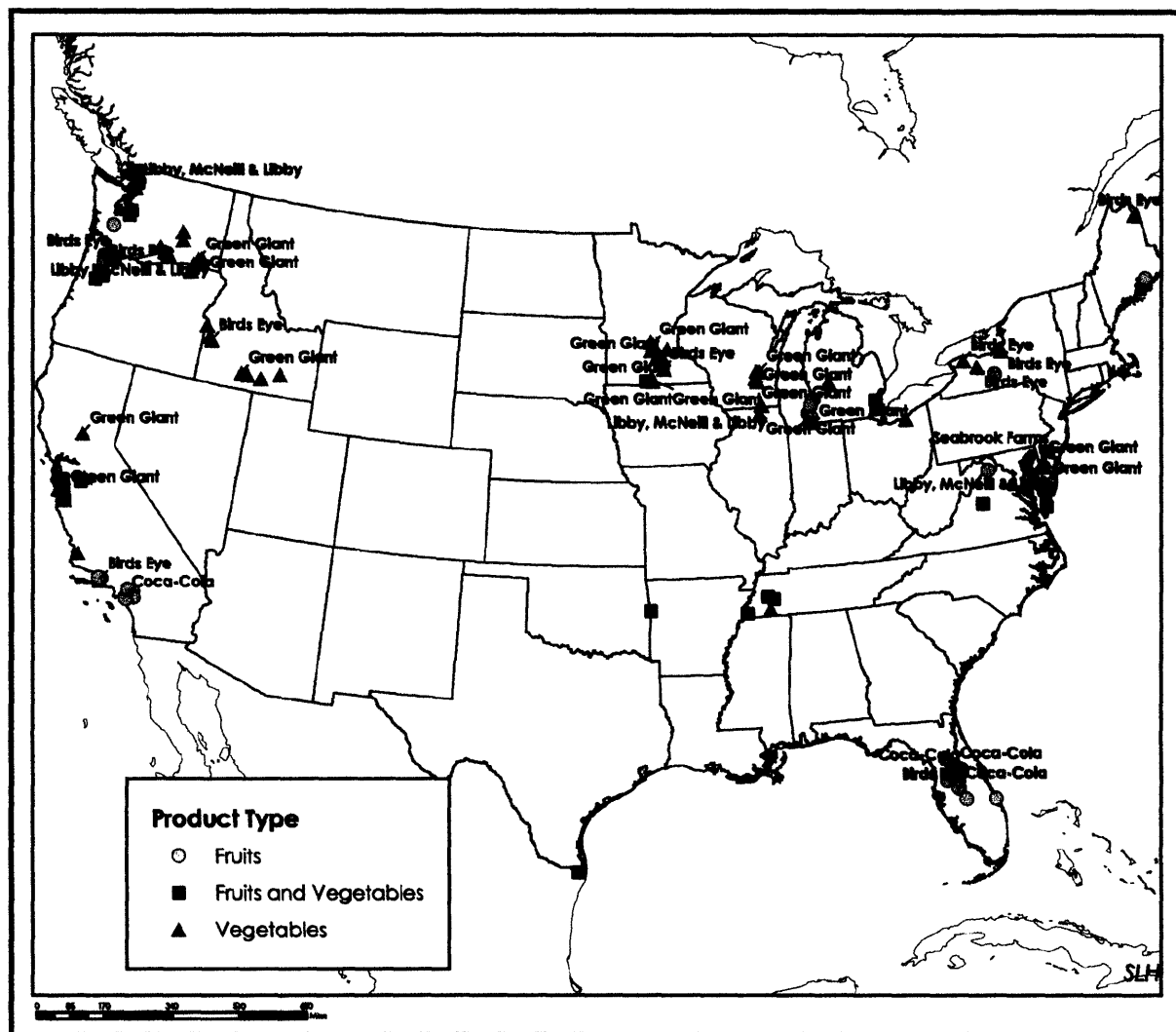
²⁵⁰ McWethy, "Frozen Food Glut," 1; Senate Committee on the Judiciary, *Concentration*, 492.

one of the nation's largest grocery wholesalers.²⁵¹ A major new competitor arrived to the field in 1962 when the Green Giant Company converted a number of its canning factories to freezing factories and began purchasing competitors' factories; within a decade it had become Birds Eye's primary competition.²⁵² Driving this wave of consolidation was a desire on the part of powerful firms to gain the factories and markets of their competitors. Buying up factories allowed firms to spread out their production sites, thereby minimizing the risks to any individual firm of purchasing seasonally produced raw materials from a large number of farmers. This can be seen in **Map 4.3**, which shows the distribution of 114 large frozen food factories, operated by 42 firms, in 1968. Although the factories were confined to states with environmental conditions suitable to intensive produce production, each of the large firms owned multiple factories at multiple sites to assure access to raw materials in any season. In other words, little had changed in the geography of production since Birds Eye first began its push for decentralization in the late 1940s, except that now that decentralization was combined with a greater degree of economic centralization.²⁵³

²⁵¹ This sale was initiated by C. F. Seabrook, who sold his shares in the company to Seeman Brothers without first consulting his sons, who had become the de facto managers of the company. C. F.'s action sparked a bitter series of court battles, as his sons believed C. F. had made the deal either out of spite for his well-educated sons (he had no formal degree), or as a result of senility caused by an earlier stroke. Seabrook, *Henry Ford of Agriculture*, 48-53; "The Seabrook Purchase," *QFF* (Jun. 1959): 51-3.

²⁵² "Minute Maid Buys Snow Crop Unit of Clinton Foods," *WSJ*, Dec. 1, 1954, 8; "Stokely-Van Camp Buys Control of Pictsweet Foods," *WSJ*, Jul. 7, 1954, 4; "Coca-Cola Says '60 Net Will Exceed That of '59," *WSJ*, Dec. 23, 1960, 4; "Green Giant Continues Its Diversification To Stabilize Earnings," *WSJ*, Jun. 11, 1971, 23.

²⁵³ *Directory of the Canning, Freezing, Preserving Industries* (Westminster, MD: Edward E. Judge & Son, 1968).



Map 4.3: Major Frozen Food Factories, 1968

Geographic decentralization of frozen food packing was coupled with economic centralization in the 1960s, as major firms such as Birds Eye, Green Giant, Libby, and Coca-Cola purchased the facilities of smaller firms. (Only fruit and vegetable plants of firms producing an annual volume over 30 million pounds are shown.) Source: *Directory of the Canning, Freezing, and Preserving Industries* (1968).

The mass-marketing approach of the 1950s meant that only frozen food packers practicing very high-volume production and operating at relatively low margins could successfully compete in the marketplace. But even at high production volumes many packers found profits slacking in the late 1950s, as illustrated by a Standard and Poor's survey that

showed nearly all packers and distributors bringing sub-par returns in 1957.²⁵⁴ As the so-called "Eisenhower recession" took shape in 1957 and 1958, frozen food firms sought to reassert their power in the marketplace to increase profits. Whereas the industry had focused for the previous decade on cultivating a mass market by offering convenient staple foods at prices competitive with canned items, by the early 1960s packers devised a new strategy. Turning from mass marketing to segmented marketing, the industry sought to take into account race, ethnicity, age, gender, and especially class differences in order to cultivate "untapped markets."²⁵⁵ Above all, packers worked to attach a higher price tag to the "convenience" of frozen food.

Besides the recession, the new approach derived from two more proximate causes. One was an article appearing in *Fortune* magazine in 1959 which showed that wealthier consumers spent a far greater percentage of their income on frozen food than middle- and lower-income buyers.²⁵⁶ The second was a case study published in 1960 by the Harvard Business School which argued that frozen food did not offer a reasonable return on investment for supermarkets.²⁵⁷ Summing up these two studies, Edwin W. Williams, the editor of *Quick Frozen Foods*, called for a redefinition of the industry's goals: "The industry has become pretty much a 'class-less society' with price as the only yardstick. This is not only dangerous, but a deterrent to profit and growth."²⁵⁸ The way to make frozen food sell at higher prices was to redefine the value of "convenience." The big-selling convenience foods of the mid-1950s had been simple items—orange juice, fish sticks, french fries, pot pies, plain vegetables and fruits—but in the late 1950s and early 1960s packers began unveiling entirely new lines of "premium products." Consumer incomes were rising, noted one contributor to *Quick Frozen Foods* in 1958, making buyers "fair prey to more exotic, better packaged and more expensive foods—no doubt about it."²⁵⁹ "Exotic" may have been a stretch, but the new frozen food items of the 1960s were certainly different. Seabrook Farms kicked off the new approach in 1958 with a line of premium quality vegetables, including petite peas and asparagus with hollandaise, sold in classier-looking packages than

²⁵⁴ "Financial Outlook for Frozen Food Packers," *QFF* (Oct. 1957): 52.

²⁵⁵ Hamilton, "Economies and Conveniences," 53-9.

²⁵⁶ "The 'Ordinary' \$125-Billion Market," *Fortune*, Sep. 1959, 132-5.

²⁵⁷ John E. Bingham, C. Richard Kramlich, and John D. Leland, Jr., *Are Frozen Foods Profitable for Supermarkets?* (Boston, 1960).

²⁵⁸ Edwin W. Williams, "What's Ahead in Frozen Foods," *QFF* (Nov. 1961): 77.

²⁵⁹ "Retailers Advised to Get Set for Rise in Demand for Prepared Frozen Foods," *QFF* (Aug. 1958): 67.

staple items and selling for a few cents more at retail.²⁶⁰ Other packers quickly followed suit. In 1959 the trade journal *Chain Store Age* reported that the introduction of premium and gourmet lines had resulted in a 20 percent increase in the number of frozen foods available in the nation's supermarkets in just one year.²⁶¹ In 1959 the Stouffer Corporation began freezing items available in its East Coast restaurants, including lobster Newburg, king crab imperial, and spinach souffle.²⁶² The Birds Eye division of General Foods continued the trend, noting in 1962 that "the total U.S. expenditure for food has been moving consistently upward," thereby justifying the introduction of a "new line of premium quality frozen vegetable dishes" including Green Peas with Sauteed Mushrooms, Fordhook Lima Beans with Cheese Sauce, and Mixed Vegetables with Onion Sauce.²⁶³ Birds Eye advertisements touted these new vegetable combinations as being "as exciting as the rest of your meal."²⁶⁴ Furthermore, Birds Eye claimed that the new vegetables offered "built-in chef service"—a noticeable change from 1950s claims that frozen food provided "built-in maid service." Whereas the value of convenience had previously been sold in terms of labor-saving, now it was an indicator of an elevated concept of "the good life."²⁶⁵ Even as packers continued to sell high-volume, low-priced staple products such as green peas and orange juice—although increasingly as "B grade" or store labels—through the 1960s they enticed consumers with new flavors, new sauces, and new packages.²⁶⁶ Such luxuries, even if less conspicuous than the enormous Cadillacs of the period, came at a price.²⁶⁷

The new focus on highly prepared foods required more complex marketing machinery than ever before. Premium products, with their sauces and diverse mixtures of vegetables, meats, and starches, proved to be more unstable in texture and flavor than the more traditional

²⁶⁰ Seabrook Farms, *Annual Report*, 1959; "Premium Line of Frozen Vegetables," *QFF* (Aug. 1958): 64; Fred R. Fleischman, "The History and Future of FF in Boilable Bags," *QFF* (Mar. 1960): 222.

²⁶¹ "Annual Frozen Food Merchandising Section," *Chain Store Age*, Apr. 1959, 160.

²⁶² Victor J. Hillery, "Sales of Frozen Food Speed up but May Hit a Legal Barrier; States Start to Regulate Food Temperatures," *WSJ*, Dec. 15, 1960, 1; "Growth: The Story of Stouffer's Frozen Prepared Foods," *QFF* (Jun. 1962): 163-82.

²⁶³ General Foods Corporation, *Annual Report*, 1962, 5-6.

²⁶⁴ Advertisement for Birds Eye, "Why Should Vegetables Be the 'Quiet Corner' of Your Plate?" *Ladies Home Journal*, Nov. 1963, 38; "Sauce Varieties other than Butter Create Plus Sales for Prepared Vegetable Packer," *QFF* (Nov. 1964): 81.

²⁶⁵ General Foods Corporation, *Annual Report*, 1963, 9.

²⁶⁶ "Are B Grade Brands Coming Back?" *QFF* (Aug. 1958): 310; "Output Doubled in Frozen Foods," *NYT*, Apr. 15, 1963, 118.

²⁶⁷ Roland Marchand, "Visions of Classlessness, Quests for Dominion: American Popular Culture, 1945-1960," in *Reshaping America: Society and Institutions, 1945-1960*, ed. Robert H. Bremner and Gary W. Reichard (Columbus: Ohio State University Press, 1982), 165-70.

frozen foods. The Western Regional Research Laboratory's TTT study had emphasized the importance of keeping frozen food at 0°F at all times, but this recommendation took on a greater importance as packers sought to implement their new marketing strategy of emphasizing quality over price. Most important, frozen food packers began a concerted effort to upgrade their distribution system—particularly refrigerated transportation equipment. The need for haste in this project was spurred by a report issued in 1959 by the Association of Food and Drug Officials of the United States (AFDOUS). Traditionally concerned with promulgating codes for consumer health safety, in 1959 AFDOUS took a new path, "stepping into the regulation of quality" by drafting a code meant as a guide for states to require frozen food shippers to maintain products at or below 0°F.²⁶⁸ Apparently the officials had read the TTT study results and felt its recommendations should be backed by the force of law.²⁶⁹ The main problem, AFDOUS officials believed, was that perhaps less than one in ten truck trailers for frozen food was capable of maintaining 0°F over long hauls.²⁷⁰ Various states began passing laws based on the AFDOUS code, the first being Florida in 1959, followed by Massachusetts in 1961, then Illinois, Connecticut, and Georgia by 1964.²⁷¹ As states began calling the bluff of packers advertising the high quality of their premium products yet often utilizing inadequate transportation equipment, the National Association of Frozen Food Packers sought to forestall increasing state regulation by implementing a "voluntary" code of frozen food handling based on upgraded distribution equipment.²⁷²

Once again the frozen food industry enlisted the help of the USDA's transportation engineers to develop standards for improved reefers. With funding provided by the National Association of Frozen Food Packers and the Truck-Trailer Manufacturing Association, the USDA's Agricultural Marketing Service undertook a set of projects to evaluate trailers capable of

²⁶⁸ Hillery, "Sales of Frozen Food Speed Up," 13.

²⁶⁹ M. J. Copley, "AFDOUS Meeting," Western Utilization Research and Development Division Notes from the Director, Jun. 17, 1960, Records of the Western Regional Research Center, Box 22.

²⁷⁰ Hillery, "Sales of Frozen Food Speed Up," 13; "Revised Frozen Food Handling Code Adopted by Food & Drug Officials," *QFF* (Jul. 1961): 111-3.

²⁷¹ H. P. Schmitt (Research Director, National Association of Frozen Food Packers), "Status of the AFDOUS Zero Degree Code," *Refrigerated Transporter* (Aug. 1964): 11.

²⁷² "All-Industry Voluntary FF Handling Code," *QFF* (Jun. 1961): 50-2, 161-2.

maintaining 0°F over long hauls.²⁷³ The most promising trailer technology was the "cold-wall trailer," developed in 1961 by the Utility Trailer Manufacturing Company and Thermo King. Unlike standard reefers, the cold-wall trailer provided a "blanket of cold air" between the trailer's inner aluminum walls and its insulated outer walls. This blanket of cold air circulated around the entire load of frozen food, allowing reefers to achieve lower temperatures without greatly increasing the size or capacity of the refrigeration equipment.²⁷⁴ As in earlier tests on reefer trailers, the USDA ran various cold-wall trailer configurations through road tests, carrying for instance a load of frozen french fries from Idaho to Cincinnati, Ohio, in 90-degree outside weather. In comparison to a traditional reefer carrying the same load, the cold-wall trailer successfully maintained a temperature several degrees below 0°F while the standard reefer reached temperatures as high as 8°F.²⁷⁵ Importantly, the Agricultural Marketing Service justified these tests, not as being in direct service to an industry seeking to increase its profits, but as a method to "improve the marketing of farm products and to hold down its costs."²⁷⁶ But in reality, the tests were performed in close cooperation with Ore-Ida (a major processor of frozen french fries), Utility Trailer, and Thermo-King—with the latter two especially uninterested in holding down the cost of refrigeration equipment.²⁷⁷

The frozen food industry used the USDA's work on reefers to insist that trucking companies immediately upgrade their equipment. Many truckers resisted, however, understanding that cold-wall trailers or other trailers capable of meeting the stringent requirements of the TTT and AFDOUS codes would be expensive, requiring not only new equipment but also driver retraining. Perhaps most frightening was the prospect of increased damage claims, since shippers armed with TTT data could demand that truckers pay for loads that arrived at the warehouse above 0°F. In 1958 M. J. Copley informed his colleagues at the

²⁷³ "Wanted: Zero Degree Frozen Food Transports," *Trailer/Body Builders* (Dec. 1959): 6; "New 'Cold-Wall' Reefer Eliminates Need for Normal Air Circulation in Transit," *QFF* (Sep. 1962): 139.

²⁷⁴ David Warren Kuenzli, *The Cold-Wall Trailer Maintaining Frozen Food below Zero* (Washington, DC: USDA, Agricultural Marketing Service, 1962), 2.

²⁷⁵ *Ibid.*, 7-13.

²⁷⁶ *Ibid.*, ii.

²⁷⁷ Thermo King, for instance, began installing diesel engines in its reefer units in 1961. Although a diesel engine was cheaper to operate than a gasoline engine, the initial sticker price was significantly higher since only Mercedes-Benz made a diesel engine lightweight enough to be used in reefers. Earl Melby (Chief Test Engineer, Thermo King), "New Developments by Thermo King," Presentation at Transportation of Perishables Conference, University of California, Mar. 28, 1961, RG 136, Entry 42, Box 4, Folder 28.

WRRL that the TTT study had gained widespread currency among frozen food packers and distributors, who were using it as leverage to demand that truckers record temperature variations during shipment, a request that "many of the carriers have bitterly protested."²⁷⁸ Sympathizing with frozen food packers and shippers—and hoping to have their decade's worth of research fully implemented—Copley's team at the WRRL initiated a project in 1958 to force truckers to conform to the TTT standards. The solution was a tiny piece of monitoring technology called a "time-temperature indicator," developed in cooperation with the Minneapolis-Honeywell Regulator Company. Essentially a thermometer capable of recording temperature fluctuations over time, the device housed dissimilar metals at each end of a cigarette-sized plastic tube. The dissimilar metals were connected by a copper strip which created electrochemical reactions in response to temperature changes; these responses were then transmitted to a pH-sensitive paper which recorded a shipment's temperature history as a clearly visible color gradient.²⁷⁹ By 1963 Minneapolis-Honeywell had successfully commercialized the device, allowing frozen food packers to gain an unprecedented degree of control over the conditions under which their products moved through the distribution system..²⁸⁰ By 1968, such efforts to tame the flexibility of frozen food distribution were declared successful by the author of a textbook on the subject, who noted that the issues raised by the TTT studies and AFDOUS codes were no longer a "major problem."²⁸¹

By the mid-1960s, then, the USDA's work on frozen food transportation equipment, along with the AFDOUS codes and the frozen food industry's new interest in marketing premium products, brought a marked increase in the expense of distribution. This became especially apparent in the reefer trucking industry, as the rapid increase in capital needed to purchase the new reefer trailers began driving small trucking firms out of business. In 1964 and 1965, the largest reefer trucking firms expanded their fleets by an average of 14 new trailers

²⁷⁸ M. J. Copley, "TTT Publicity Bearing Fruit," Western Utilization Research Branch Notes from the Director, Sep. 26, 1958, Records of the Western Regional Research Center, Box 22. See also "Wanted: Zero Degree Frozen Transports," 6.

²⁷⁹ M. J. Copley, "Time-Temperature Indicator for Frozen Foods," Western Utilization Research and Development Division Notes from the Director, Sep. 22, 1961, Records of the Western Regional Research Center, Box 22.

²⁸⁰ Fred Stitt, "Frozen Food Packers Becoming Quality Conscious," Western Utilization Research and Development Division Notes from the Director, Mar. 15, 1963, Records of the Western Regional Research Center, Box 22.

²⁸¹ Kaylin, *Understanding Today's Food Warehouse*, 158.

capable of holding frozen food at 0°F. Smaller firms and owner-operator truckers were left with the choice of either investing huge amounts of capital to compete, or simply giving up and hiring themselves and their tractors out to the bigger fleets.²⁸² In the late 1940s and early 1950s, packers had relied on flexible distribution technologies to bring the price of frozen food within the reach of "the masses," but by the mid-1960s those distribution technologies were the centerpiece of an industry-wide effort to raise the price of convenience. Ironically, the USDA's engineering work on the distribution system helped make this happen, even though the original reason for the USDA's involvement had been the political conveniences of a low-cost mass market.

Conclusion

In 1964 Birds Eye hired the McKinsey management consulting company to evaluate the success of its new marketing strategy. Surveying the entire system of production and distribution, McKinsey found that in comparison to other foods, frozen food had become remarkably expensive to handle, store, and distribute. The expense of distribution, however, could be offset by selling high-end convenience products at high margins while allowing supermarkets to push "B grade" staples under their own labels at lower margins.²⁸³ The McKinsey study vindicated the segmented marketing approach, but it also unintentionally exposed an essential irony in the progression of the frozen food industry. Born amidst hopes of revolutionizing the American diet by providing quality and convenience to "the masses," the industry rather quickly gave up such hopes almost immediately after achieving the goal in the mid-1950s. The industry's successes in the 1950s convinced the USDA to help refine the technologies that made such mass distribution possible, with frozen food promising not only revolutionized diets but also rationalized agricultural marketing; yet, by putting those technological refinements into place the frozen food industry conformed more closely to patterns of profit-oriented corporate capitalism than to a political economy based on

²⁸² H. P. Schmitt, "Status of the AFDOUS Zero Degree Code," *Refrigerated Transporter* (Aug. 1964): 11; "Fewer Trucklines Gain Greater Share of Zero Temperature Transportation," *QFF* (Feb. 1965): 319-22.

²⁸³ McKinsey and Company, *McKinsey-Birds Eye Study: The Economics of Frozen Foods* (White Plains, NY: General Foods Corporation, 1964).

harmonious relations between farmers, processors, consumers, and the state. The flexibility of trucking, which had helped frozen food packers shift from luxury to mass marketing, later aided packers in their efforts to combine economic centralization, geographical decentralization, and segmented markets to maximize profits. Reefer trucking thus proved flexible, indeed—not only in geographical and technological terms, but also as a function of political economy.

Chapter 5: The Truck Driving Man in the Rural Industrial Landscape

"The combination of truck drivers and Country music is a 'natural' as most everyone knows," declared music reporter Virginia Alderman in 1975, noting that truck drivers were "some of the best fans country music has."¹ By the time of that statement, country music artists and producers had recorded a catalog of several hundred popular songs about truckers, seeking to profit from the fact that trucking had become "country" by lauding the "truck driving man" as a new kind of rural working-class hero. Trucks were deeply embedded in the political and economic structures of the postwar countryside, as earlier chapters have argued. But trucks carried more than agricultural commodities and processed food products. They also carried a set of distinctly rural values, providing opportunities for men who wished to maintain a rural lifestyle and culture as they navigated the structures of late industrial capitalism. Trucking was a manly occupation, and the manly culture that enveloped it provided a vehicle for rural men to imagine themselves as independent small producers, at a time when farming—traditionally the means of cultivating that sense of independence—declined in importance as the defining feature of rural life. Encouraged by popular culture representations that declared truckers "kings of the open road" and the "last of the American cowboys," truckers embraced a culture that became increasingly fierce in its individualism from the 1930s to the late 1970s. In so doing, truckers helped push the social world of the postwar countryside away from any affinity for collective social values or appreciation (however reluctant) for state intervention in the rural economy, and towards a vigorous form of producerist populism that was anti-statist, anti-corporate, and anti-labor union.

¹ Virginia Alderman, "Truckers Jamboree," *Country Song Roundup*, May 1975, Dick Curless File, Country Music Hall of Fame Library, Nashville, TN (hereafter CMHF Library).

The Rural Industrial Landscape

This dissertation has left one question tantalizingly unanswered to this point. How did truck drivers, the men behind the wheels of the marketing machine, come to be enrolled in that machinery? Capitalism must produce not only goods and values, but also must reproduce itself as a system; in doing so, it requires either the cooperation or the co-optation not only of the state, but also of workers.² In the case of the postwar marketing machine, we have seen how the state was enrolled to produce and reproduce capitalist values in the context of a super-industrialized consumer-oriented food economy. But how were truck drivers convinced to participate in that new economy?

The answer is that long-haul trucking created the conditions for rural men to preserve a meaningful sense of rural identity even while being enmeshed in the tentacles of urban-industrial capitalism. The arrival of long-haul trucking as a significant technological force came at a key moment in rural America's history, as industrialized agriculture made the practice of farming increasingly peripheral to the daily economic and social lives of most rural people. The story of the "death of the family farm" is familiar, if misleading; for while the size and scale of the average farming operation increased dramatically in the mid-twentieth century, the social impact had less to do with the disappearance of the family-owned farm than with the rapid decline of the number of people who made their living directly from the land.³ Over the long twentieth

² Karl Marx, *Capital: A Critique of Political Economy*, Vol. 1 (New York: Random House, 1906 [1867]), Chapter 23; Donald J. Harris, "On Marx's Scheme of Reproduction and Accumulation," *Journal of Political Economy* 80 (May 1972): 505-22; David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Oxford: Blackwell, 1990), 121-4.

³ The number of farms in the United States decreased by 62% between 1930 and 1980 (from 6,545,600 to 2,439,510); while the average farm size increased from approximately 150 acres in 1930 to 425 acres in 1980, with the average farm size doubling between 1950 and 1980. Nonetheless, the "family farm" has not disappeared; the vast majority of American farms continue to be owned by individuals rather than corporations (in 1997, for instance, 86% of farms were operated by an individual or family proprietor) and are relatively small in size (at least by U.S. standards). More importantly, the percentage of the U.S. population living on farms declined from 24% in 1930 to only 2.5% in 1980, while the overall rural population only declined from 44% to 26% of the total population in that period. The percentage of the labor force "engaged in agriculture," according to the Census, declined from 21% in 1930 to less than 3% in 1980. Even for those who continued to stay on the farm, income derived from off-farm work became increasingly important, particularly in the postwar period; 38 percent of farm operators worked off the farm at least some

century, and with especially rapidity following the end of World War II, a set of wrenching economic and social changes redefined rural life in America, creating what we might call a "rural industrial landscape."

More commonly referred to as the industrialization of agriculture or the "death of the family farm," what happened to rural American life during this period was more widespread and pervasive than these phrases allow. Most historians writing about industrial agriculture emphasize the increased scale and commodity orientation of farming; the intensive mechanization of planting and harvesting; the application of scientific methods to plant breeding, livestock raising, crop fertilization, and pest and weed control; and the development of wage-labor relations as the keys to agricultural industrialization. Depending on which factor is taken to be the central feature of industrial agriculture, historians have pointed to a multitude of locations and time periods as the origins of this system. Most commonly noted are the "bonanza" wheat farms of California's San Joaquin Valley in the 1870s and 1880s, where spreads as large as entire counties were owned by speculative capitalists deploying giant machines to extract profits out of the land at an industrial pace.⁴ Other agricultural historians, noting the short-lived existence of the bonanza farms, take the wheat farms of the Great Plains in the post-World War I period to be more representative of a widespread industrial ideal in agriculture, characterized by a systematic, capital- and technology-intensive, state-supported effort to make farmers into efficient businessmen, raising food solely for sale to distant markets with minimal concern for local ecological conditions.⁵ Still others have interpreted industrialization primarily as a social rather than economic shift, as the

days in 1949, and by 1978 that was the case for 64 percent. "Rural" thus did not correlate with "agriculture" by 1980. For data, see U.S. Bureau of the Census, *Historical Statistics of the United States*.

⁴ Carey McWilliams, *Factories in the Field: The Story of Migratory Farm Labor in California* (Boston: Little, Brown, and Company, 1939), 48-65; Steven Stoll, *The Fruits of Natural Advantage: Making the Industrial Countryside in California* (Berkeley: University of California Press, 1998), 25-31;

⁵ Deborah K. Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003), esp. 106-56; Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979); David B. Danbom, *The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930* (Ames: Iowa State University Press, 1979). Pete Daniel, while agreeing with this model of industrial agriculture, has shown that its development in specific Southern ecological and social contexts did not fully arrive until federal government policies forced the issue; see *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880* (Urbana: University of Illinois Press, 1985).

family farm model was supplanted by a gendered division of labor in which women were consigned to "reproductive" rather than "productive" roles on the farm, even as white male farm owners came to rely increasingly on racialized wage labor, while community-based social bonds eroded in the countryside.⁶

But however one defines industrial agriculture, it is clear that by the mid-twentieth century, the life of most rural Americans came to be defined less by productive relations to the land than by the demands of agribusiness corporations, the federal government, and distant consumers. One consequence of this shift was the erosion of the political and cultural sway of the "agrarian myth," a widespread conviction held since the colonial era that men (and they were always men) who worked the soil were the "backbone" of American participatory democracy and the anointed repositories of moral virtue.⁷ In the mid-twentieth century, however, the cultural power of the agrarian myth faded dramatically, as the industrialization of agriculture brought an unprecedented centralization of economic power into the production of foodstuffs, making even family farming so highly capitalized and commodity-oriented that the agrarian myth's ever-

⁶ Deborah Fink, *Agrarian Women: Wives and Mothers in Rural Nebraska, 1880-1940* (Chapel Hill: University of North Carolina Press, 1992); Joan Jensen, *With These Hands: Women Working on the Land* (Old Westbury, NY: Feminist Press, 1983); Mary Neth, *Preserving the Family Farm: Women, Community, and the Foundations of Agribusiness in the Midwest, 1900-1940* (Baltimore: Johns Hopkins University Press, 1995); Jane Adams, *The Transformation of Rural Life: Southern Illinois, 1890-1990* (Chapel Hill: University of North Carolina Press, 1994); Cletus E. Daniel, *Bitter Harvest: A History of California Farmworkers, 1870-1941* (Ithaca: Cornell University Press, 1981); Sucheng Chan, *This Bittersweet Soil: The Chinese in California Agriculture, 1860-1910* (Berkeley: University of California Press, 1986); Neil Foley, *The White Scourge: Mexicans, Blacks, and Poor Whites in Texas Cotton Culture* (Berkeley: University of California Press, 1997); Cindy Hahamovitch, *The Fruits of Their Labor: Atlantic Coast Farmworkers and the Making of Migrant Poverty, 1870-1945* (Chapel Hill: University of North Carolina Press, 1997); Walter G. Goldschmidt, *As You Sow: Three Studies in the Social Consequences of Agribusiness* (Montclair: Allanheld, Osmun, 1978 (1947)); John L. Shover, *First Majority, Last Minority: The Transforming of Rural Life in America* (De Kalb: Northern Illinois University Press, 1976); Hal S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930* (Chapel Hill: University of North Carolina Press, 1997).

⁷ The literature on the agrarian myth is extensive. Key texts include Richard Hofstadter, *The Age of Reform: From Bryan to F. D. R.* (New York: Vintage Books, 1955); Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America*, 2nd ed. (New York: Oxford University Press, 2000 [1964]), esp. 97-100, 125-8; Henry Nash Smith, *Virgin Land: The American West as Symbol and Myth* (Cambridge, MA: Harvard University Press, 1950), esp. 123-32; Tamara Plakins Thornton, *Cultivating Gentlemen: The Meaning of Country Life among the Boston Elite, 1785-1860* (New Haven: Yale University Press, 1989). The use of the word "men" is quite intentional; as Deborah Fink and Joan Jensen (among others) have shown, the agrarian myth was strictly gendered from its inception. See Fink, *Agrarian Women*; Jensen, *With These Hands*; also Jon Gjerde, *The Minds of the West: Patterns of Ethnocultural Evolution in the Rural Middle West, 1830-1917* (Chapel Hill: University of North Carolina Press, 1997), esp. Chapter 6; Sonya Salamon, *Prairie Patrimony: Family, Farming, and Community in the Midwest* (Chapel Hill: University of North Carolina Press, 1992).

tenuous connection to rural reality became farcical.⁸ Furthermore, as farms consolidated and rural people increasingly migrated to cities in the twentieth century, the population base of rural America collapsed, bringing down with it the power of the agrarian myth to dominate the nation's political arrangements. This became most apparent in the "one-man, one-vote" decisions of the Supreme Court in 1964, which tied Congressional representation and electoral votes to population rather than geography, breaking centuries' worth of rural dominance in the nation's legislative domain.⁹

The agrarian myth, as promulgated by Thomas Jefferson and St. John de Crèvecoeur, became utterly divorced from rural reality in postwar America, as the demands of urban industrialism penetrated deep into the countryside. Agrarianism, whether understood as economic reality or cultural myth, came to be replaced by a rural industrial landscape where not only farming became industrialized, but non-agricultural manufacturing became increasingly central to the rural experience.¹⁰ Whereas rural life had once been clearly defined by a combination of an agriculturally based economy and sparse population, by the mid-twentieth century rural people were forced to confront the challenges of maintaining a rural sense of identity in the most modern of times. "Ruralness" in the postwar period came to be defined by a sense of living in places that were on the periphery of, yet deeply intertwined with, urban industrial capitalism. Even as rural people recognized that those peripheral places were exploited and shaped by distant centers of power, they came increasingly to search for personal and collective

⁸ Gilbert C. Fite, *American Farmers: The New Minority* (Bloomington: Indiana University Press, 1981).

⁹ The Supreme Court cases were *Wesberry v. Sanders*, 376 U.S. 1 (1964) and *Reynolds v. Sims*, 377 U.S. 533 (1964). See Michael L. Balinski and H. Peyton Young, *Fair Representation: Meeting the Ideal of One Man, One Vote* (New Haven: Yale University Press, 1982); Gordon E. Baker, *Rural versus Urban Political Power: The Nature and Consequences of Unbalanced Representation* (New York: Random House, 1955); Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917* (Chicago: University of Chicago Press, 1999); John Mark Hansen, *Gaining Access: Congress and the Farm Lobby, 1919-1981* (Chicago: University of Chicago Press, 1991).

¹⁰ On rural industrialization by non-agricultural firms, see Michelle Hoyman, *Power Steering: Global Automakers and the Transformation of Rural Communities* (Lawrence: University Press of Kansas, 1997); Melissa Walker, *All We Knew Was to Farm: Rural Women in the Upcountry South, 1919-1941* (Baltimore: Johns Hopkins University Press, 2000).

identities that would help them establish secure psychological moorings, allowing them to take pride in their outsider status.¹¹

From the 1930s through the late 1970s, the culture of long-haul trucking emerged within this context to represent a reinvigorated form of the agrarian myth, an agro-industrial myth, that corresponded more closely to the new social and economic realities of America's rural industrial landscape. At the heart of the old agrarian myth was a faith, not necessarily based in reality, that working the land could provide a man with the ability to control his own destiny. Independence and hard but self-directed work, as opposed to urban wage labor, defined the core of rural manliness. As the economic basis of this ideal eroded in the twentieth century, rural men were forced to look elsewhere for a chance to cultivate their masculinity, and the arrival of long-haul trucking proved fortuitous in this search. Truck driving provided men with meaningful work opportunities that allowed them to imagine themselves as bearers of traditional rural values of manhood in an industrial context. Encouraged by country music, films, and television representations of trucking culture, men came to believe that trucking provided a sense of economic independence akin to that previously imagined for farming; a sense of geographic and sexual mobility even as they maintained traditional family values; a chance to publicly demonstrate mechanical skill and power; and an arena in which to work out anti-authority and anti-establishment sentiments—all values that had long been central to masculine identity in rural America.¹²

As we shall see, this new agro-industrial myth was not necessarily more realistic nor more admirable than the agrarian myth that it replaced. In particular, the idea that driving a truck provided a route to economic independence was always as much a dream

¹¹ W. Keith Warner, "Rural Society in a Post-Industrial Age," *Rural Sociology* 39:3 (1974): 309; Harvey, *Condition of Postmodernity*, 286-7, 292, 302.

¹² This statement should not be taken to mean that masculinity is an unchanging construct, in either rural culture or in American culture more broadly. Instead, this chapter will trace how the technology of long-haul trucking helped rural men define and redefine their ideals of masculinity in specific economic and work contexts. This approach owes much to E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York: Basic Books, 1993); Ruth Oldenziel, *Making Technology Masculine: Men, Women, and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); Roger Horowitz, ed., *Boys and Their Toys? Masculinity, Technology, and Class in America* (New York: Routledge, 2001).

as a reality. Furthermore, like the old agrarian myth, the benefits of being a "truck driving man" were reserved almost solely for white men, at least until the late 1960s. Finally, the agro-industrial myth surrounding long-haul trucking never proved a successful means for organizing a political movement to contest the exploitative aspects of the rural industrial landscape. The emergence of the truck driver as the "last American cowboy" in the 1970s defined rural manhood as a matter of fierce independence rather than social belonging, helping contribute to the increasingly chaotic nature of life in the postwar rural industrial landscape.

Getting off the Farm, But Staying Country

The rapid growth of long-haul trucking in the 1930s came at a time when thousands of young rural men were forced to look for off-farm work. Faced with both a decade-long—and deepening—agricultural depression, as well as an increasingly industrialized agriculture requiring fewer farm workers, many young men had to make an uncomfortable choice. Staying on the farm most likely would entail years of debt and uncertain prospects. Moving to the city to take a factory job might provide economic security, but it might also entail a painful separation from one's rural roots, particularly if those roots were Southern and the factory city was Northern.¹³ For many rural men in the 1930s, trucking offered a chance to remain in the country while, at least theoretically, becoming the owners of their own small businesses rather than factory "hands" deprived of their independence. This helps explain why, by the 1970s, sociologists found that up to 70 percent of truck drivers, especially "independent" owner-operators who drove their own trucks, were either one-time farm boys or otherwise had their roots deep in the country.¹⁴

¹³ Chad Berry, *Southern Migrants, Northern Exiles* (Urbana: University of Illinois Press, 2000).

¹⁴ Jason Landsback, "Inception and Growth of an Anti-Teamster Movement among the Independent Steel Haulers" (unpublished Master's thesis, University of Pittsburgh, 1971), cited in D. Daryl Wyckoff and David H. Maister, *The Owner-Operator: Independent Trucker* (Lexington: Lexington Books, 1975), 65.

Farm boys were common recruits for the growing trucking industry in the 1930s. In one of the first comprehensive government surveys of the industry, the Federal Coordinator of Transportation noted in 1936 that intercity truck drivers were mostly "farm boys and young men from country villages" who were willing to work unconscionably long hours at low pay just to be working at all.¹⁵ The work ethic of farm boys proved especially attractive over the years to firms looking for employees "accustomed to hard work" who also had intimate familiarity with operating and maintaining heavy mechanical equipment.¹⁶ But their work ethic was not the only reason many farm boys became truckers; during the Great Depression, a set of interrelated economic factors made the occupation very appealing. As Secretary of Agriculture Henry A. Wallace noted in testimony before the Interstate Commerce Commission in 1934, the price of gasoline and tires dropped dramatically in the early '30s, making shipment of farm products by truck cheaper for than by rail for farmers located near good roads. Furthermore, trucking, unlike farming, as "a business comparatively easy to enter," attracted both unemployed rural men and farmers who, "faced with lower returns from production, have been willing to spend more of their time in marketing their products."¹⁷ Trucking's growth in the 1930s was further encouraged by a dramatic expansion in truck production, with truck manufacturers seeing farmers as a key market to be lured by generous credit terms. Farmers bought 26 percent of the nation's total truck production in 1936, contributing to a record-breaking year of sales for the truck manufacturers. General Motors, for instance, saw a sales gain of 156 percent between 1935 and 1936, while Mack gained 118 percent.¹⁸ These factors combined with the agricultural depression under way in the 1930s to make truck driving a viable option for getting off the farm.

¹⁵ Federal Coordinator of Transportation, *Hours, Wages, and Working Conditions in the Intercity Motor Transport Industries* (Washington: GPO, 1936), 57.

¹⁶ Fred De Armond, "Selecting and Keeping Good Routemen," *Milk Dealer* (Jun. 1960): 50.

¹⁷ Henry A. Wallace, "High Freight Rates as a Retarding Factor in Agricultural and Industrial Recovery," statement at hearings before the Interstate Commerce Commission on Increase in Freight Rates and Charges, Docket Ex Parte 115, Dec. 7, 1934, Secretary of Agriculture Records, RG 16, General Correspondence, Entry 17, National Archives II, College Park, MD, Box 2001, Folder 7.

¹⁸ "Trucks Are Going over the Top," *Business Week* (hereafter *BW*), Sep. 12, 1936, 13-14.

One of the most attractive features of trucking for rural men in this period was the apparent ease of becoming an independent businessman, since farm ownership and profitability had come into serious question. The biographies of dozens of men who became truck drivers in the 1930s illustrate this. R. E. "Blick" Blickenstaff, for example, founded Ideal Truck Lines of Norton, Kansas in August 1933, after a summer of drought left him with such stunted corn that he decided to "[leave] the tractor at the end of a row of that corn and hea[d] for town," Blickenstaff later recalled. "I could see the need for a truck and since it looked like the thing to do at the time, I started in this trucking business. I always planned to go back to the farm if things got better, or after it rained. It didn't rain to any extent for seven years, and by that time I had a nice business going."¹⁹ Bill Graves of Salinas, Kansas, was another typical farm boy who began hauling grain, livestock, and fertilizer with his father in a one-ton truck in 1935. Eventually, like Blickenstaff, he got a nice business going, building Graves Truck Service into Kansas's first farm-to-market Class I interstate carrier (meaning the firm grossed over \$100,000 annually) by 1949.²⁰ Stories abound of farm boys turning one prewar truck into a giant postwar trucking empire. J. B. Hunt, whose name is familiar to anyone who has been on an interstate recently, was born to Arkansas sharecroppers but escaped the farm by hauling rice in the 1940s.²¹ Arno Dalby, who founded T.I.M.E. Freight, Inc.—one of the nation's largest trucking firms by the 1960s—started with a \$200 loan from his farmer father in 1927, buying a used Ford Model T truck to haul cotton for a Texas ginning mill.²² Paul Merrill was raised on a farm in Cumberland County, Maine; he bought his first truck, a used 1922 four-cylinder Reo, in 1929; by 1975 his Merrill Transport Company had become the largest trucking firm in Maine, with \$9 million in gross

¹⁹ Dick Boyd, "'Blick's' Ideal Truck Lines Has Come Long Way Since 'Dirty 30s'," Norton (Kansas) Daily Telegraph, May 31, 1978, Motor Carrier Industry Clippings, Kansas State Historical Society, Topeka, KS.

²⁰ "Bill Graves Heads Kansas Truckers," *Power Wagon* (Feb. 1947): 28; "Bill Graves Began with One Truck," *Kansas Transporter* (Jan. 1947): 3, 14; "Four Brothers Get First State Class I Award," *Wichita Eagle*, Sep. 3, 1950.

²¹ Marvin Schwartz, *J. B. Hunt: The Long Haul to Success* (Fayetteville: University of Arkansas Press, 1992).

²² Kenneth Rhodes, "Arno Dalby Is Living Proof That Any Goal Is Possible If You Work for It," *Lubbock Avalanche-Journal*, Feb. 28, 1961, Loyd M. Lanotte Papers, Texas Tech University, Southwest Collection, Lubbock, TX (hereafter Lanotte Papers), Reel 1.

sales.²³ Not every farmer used trucking to get off the farm; some used the cash earned from driving to keep the farm afloat. Joe Robinson, of Springdale, Arkansas, started raising poultry in 1932 and began driving a "cackle crate" in 1938, delivering his chickens to the nearby Tyson Foods plant. By 1958, the poultry trucking business had grown so profitable that Robinson owned 33 tractor-trailers, hauling not only his own chickens but those of all his neighbors as well as much of Tyson's dressed poultry, making it possible for Robinson to invest his trucking earnings into his chicken farm.²⁴

But for each driver who became a big businessman and therefore had his name recorded in the trade literature, there were thousands of anonymous drivers who struggled to become economically independent in the 1930s and 1940s. Trucks in this period were primarily small "straight trucks" (without trailers), making the capital costs of entering the trucking industry relatively low, especially with truck manufacturers and dealers extending seemingly generous credit terms. Many of the men who were able to scrap together enough money to put a downpayment on a truck in this period were simply desperate for work and had little business experience—being unfamiliar with, for instance, the concept of depreciation. "Such men were not really entrepreneurs," noted economist Samuel E. Hill in a 1942 report on work conditions in New England trucking. "They were, in essence, workers who had hired tools with which to manufacture and sell the product of their own labor."²⁵ Although they did not fit the economists' definition of "entrepreneur," the men who purchased beat-up Fords, Reos, and Dodges in the 1930s established a long-lived idea central to trucking culture—the belief that with enough hard work, it was possible to gain economic security as an independent small business owner. As one self-employed truck driver told Studs Terkel in the early 1970s, the "only reward" from his work was that "in your mind, you feel you're in business."²⁶

²³ Paul Merrill, *Forty-Six Years a Truckman: The Story of Merrill Transport Company* (New York: Newcomen Society, 1975), 8-9.

²⁴ House Committee on Interstate and Foreign Commerce, *Interstate Commerce Act: Agricultural Exemptions, Hearings*, 85th Cong., 2d sess., Apr. 23-25, 1958, 255.

²⁵ Samuel E. Hill, *Teamsters and Transportation: Employee-Employer Relationships in New England* (Washington, DC: American Council on Public Affairs, 1942), xii.

²⁶ Studs Terkel, *Working: People Talk about What They Do All Day and How They Feel about What They Do* (New York: Pantheon Books, 1974), 211.

The irresistible but difficult dream of being in business for oneself provided the central dramatic theme of the first major trucking film, *They Drive by Night*, released by Warner Brothers in 1940. Joe and Paul Fabrini, played by George Raft and Humphrey Bogart, are two "wildcat" truckers seeking a living hauling produce in California's Imperial Valley. Driving a straight truck ("no speedway special") purchased on credit, the Fabrinis struggle to find enough loads to keep the finance company from repossessing their machine. The prospects are grim; the brothers rely on a San Francisco produce broker to send paying loads their way, but the cigar-smoking fat-cat broker is in cahoots with the finance company, and seems as dedicated to having the Fabrinis lose their truck as he is to having them deliver his produce. But for Joe, the chance to be his own man is the fuel that keeps him going; when confronted by another driver who works for a trucking company and brags of receiving a steady paycheck "every Saturday," Joe retorts, "Yeah, but you get ordered around every other day." The company driver questions Joe's independence, pointing out that "you ain't workin' for you, you're workin' for the finance company." But Joe will have none of it; he is sure that with enough hard work he can turn the tables on the capitalists: "I'm on my own, anyway. You know if a guy can get together two or three big rigs there's a fortune in this business." Wildcat trucking is a gamble, as Joe fully realizes, putting his financial future at great risk, but the psychological dividends of self-assured manhood make the risk worth taking.²⁷

They Drive by Night quickly became a popular and critical success (and, incidentally, launched Humphrey Bogart's career), reinforcing an idea that took firm root as a centerpiece of American trucking culture. Even when truckers realized that relatively few made "a fortune in this business," the feeling of owning a stake in one's financial future drove many a trucker into the work. When a *Christian Science Monitor* reporter asked Burly Lockwood in 1947 why men like him became truckers, the answer came readily, if in a "slow Iowa drawl": "We're our own bosses; most of us own our own businesses. There's a lot of responsibility, but it's all our own—nobody else's."²⁸ Or as H.

²⁷ *They Drive by Night*, dir. Raoul Walsh, 97 min., Warner Bros., 1940, digital video disc.

²⁸ Thorp McClusky, "Truck Drivers Are Human, Too," *Christian Science Monitor Magazine*, Aug. 9, 1947, 13.

A. Strayer of Greeley, Colorado, put it two decades later: "What do I like most about trucking? Independence, I suppose. I've been in trucking 28 years for myself and it's made a good living for my family, wife, and son. I like it fine."²⁹ Economic self-sufficiency was central to masculine ideals in places like Iowa, Colorado, or the Imperial Valley, where farming had previously been the most common means of being a small businessman.

But like the old agrarian myth, the dream of economic independence in trucking was based only tenuously in reality. Even for drivers who owned their own rigs (owner-operators), the appropriate occupational analogy was less likely the yeoman farmer than the sharecropper. After interviewing a group of long-haul truckers in Livingston, Alabama, in 1953, Alfred Maund wrote in the *Nation* magazine that the typical owner-operator "is apparently no better off than a share-cropper, being held in similar peonage by his employer." In order to purchase a truck and trailer, truckers often relied on installment loans provided by the trucking firm to whom they contracted their labor—loans which were generally provided with the interest charged up front. In return, owner-operators received ICC operating authority under the license of the trucking company, as well as a specified share of the revenue received for each load. The typical contract, however, did not guarantee a minimum number of loads or revenue for the driver. During slow business periods, it was all too easy for an owner-operator to miss a payment on his loan, sending "his" truck and trailer directly to the firm.³⁰ And even if a trucker had paid in full for his equipment, he still generally relied on a trucking firm with ICC operating authority to provide legal loads, prompting William J. Hill, an owner-operator who agitated for deregulation during the 1970s independent trucker strikes (see below), to state: "As things stand now, we're nothing but sharecroppers."³¹ The pages of *Overdrive* magazine (the "Voice of the American Trucker") regularly displayed a similar frustration with the unrealized promise of economic independence. Hank Miller, for instance, wrote a lengthy letter to the editor expressing a common sentiment: "Didn't

²⁹ "A Man's on His Own on the Highway," *Open Road and the Professional Driver*, Jun. 1967, 5.

³⁰ Alfred Maund, "Peons on Wheels: The Long-Haul Trucker," *Nation*, Nov. 14, 1953, 393-4.

³¹ Axel Madsen, *Open Road: Truckin' on the Biting Edge* (San Diego: Harcourt, Brace, 1982), 134.

most of us as children dream of going into the trucking business when we grew up? And if we worked hard, maybe own a fleet of trucks.... Like all the Horatio Alger stories all you had to do was work hard and have a little luck to achieve success. What a grand illusion!"³² Or as Otto Riemer, an owner-operator from Wisconsin who spent dozens of years hauling produce and dairy products, summed up his life's work: "This practice, which amounts to selling out your body to haul someone else's dirty freight, is why some drivers look like old men early in life."³³

Such sentiments pointed to a core tension in American trucking culture. While the goals of ownership and self-sufficiency had always been important motivating factors, the social and economic reality of trucking made it an inherently working-class occupation. For one thing, as the Bureau of Labor Statistics pointed out in its 1959 guide to careers, "Promotional opportunities in [truck driving] are limited," no matter whether drivers owned their trucks or worked for wages.³⁴ Even more important than the low chance for a truck driver to become a manager or true entrepreneur, however, the work culture of trucking cultivated a deep sense of opposition to, and separation from, bourgeois society. Working-class manhood, particularly in a rural context, has traditionally been defined less by whether or not one owns the means of production than by an ethos shaped by economic uncertainty and the pride of overcoming that uncertainty on one's own terms.³⁵ In this regard, Paul Willis's classic study of how English schoolboys "learned" how to become working-class men is informative. Willis saw working-class male identities being forged in the industrial shops of "Hammertown," where "despite harsh conditions and external direction, people do look for meaning and impose frameworks.... Paradoxically, they thread through the dead experience of work a living culture which is far from a simple reflex of defeat."³⁶ Rather

³² Hank Miller to the Editor, *Overdrive* (Jan. 1963).

³³ Otto Riemer, *Hammer Down* (Winona, MN: Apollo Books, 1985).

³⁴ Bureau of Labor Statistics, "Over-the-Road Truckdrivers," *Occupational Outlook Handbook* 1255, 4th Ed. (1959): 419.

³⁵ Jack Temple Kirby, *Poquosin: A Study of Rural Landscape and Society* (Chapel Hill: University of North Carolina Press, 1995); Kathryn J. Oberdeck, "Review of *Workin' Man Blues* and *Don't Get Above Your Raisin'*," *Labor History* 44:4 (2003): 528-31.

³⁶ Paul E. Willis, *Learning to Labor: How Working Class Kids Get Working Class Jobs* (New York: Columbia University Press, 1981), 52.

than becoming alienated from the value of their labor because they did not own the factories where they worked, Willis's industrial workers created a defiant work culture, particularly in their informal social relations with each other, "where strategies for wresting control of symbolic and real space from official authority" were "generated and disseminated."³⁷ The key difference between a worker and a manager in Hammertown was thus a matter of the degree to which one either resisted or accommodated the demands of authority figures. A real working man, as boys learned from their earliest days in school, resisted formal authority at every opportunity, even while being expected to take great pride in working hard to produce profits for those very authorities. Managers and middle-class workers in general, on the other hand, were accommodationists who sold their manhood for comfort and security.³⁸ As George Raft's character, Joe Fabrini, stated in *They Drive by Night*, working for a guaranteed salary was "the easy way." A man who wished to be admired for his work did not take the easy way.

These statements should not be taken as a reification of working-class culture, but only to note that truck driving provided a specific context for men to create a meaningful work culture. That culture changed over time, as we shall see in more detail below, especially as truck driving men came to be more fully integrated into the growing marketing machinery of modern industry. The masculine ideal portrayed by George Raft in *They Drive by Night*, even if it was rooted in an oppositional ethos, nonetheless made respectability in the eyes of the bourgeois world a valid goal. Joe Fabrini was willing to use his fists in defense of his perceived rights, but he did right by women, refused to drink alcohol, and avoided unnecessary violence. Joe Fabrini was a man to be admired—as indicated by Raft's eagerness to take the part to shed his reputation as a "heavy" in gangster films such as *Scarface*.³⁹ The image of the respectable trucker in the 1930s and 1940s circulated outside the world of Hollywood, as truckers became known as "Knights of the Road" for helping stranded motorists and using their blinkers and headlights as

³⁷ Ibid., 54.

³⁸ Olivier Zunz, *Making America Corporate, 1870-1920* (Chicago: University of Chicago Press, 1990).

³⁹ "Divided Highway: The Story of *They Drive by Night*," companion film to digital video disc.

courtesy signals.⁴⁰ Such an image, in direct contrast to the "bandit" or "outlaw" image that would take root in the 1970s, was further reinforced by the standard driver's uniform of the era: trim, neat pants and buttoned shirt and a chauffeur's cap (see **Figure 5.1**). Even as the symbols of manhood changed within the culture of trucking over time, the mythologies of manhood grew larger and moved increasingly into a wider cultural world, where those images were then reflected back to truckers by movies, music, and television. However, the greater currency of the "truck driving man" imagery should not be taken to imply that truckers necessarily "bought" those ideas wholesale—or that by buying those ideas they were duped into a sense of false consciousness, preventing them from understanding the exploitative nature of their work. For as we shall see, truckers were continually aware that the economic and political machinery that their work contributed to quite literally "rode on their backs" (one of the most common health complaints of truck drivers has always been back pain, making the purchase of an air-ride seat a prerequisite).⁴¹

⁴⁰ McClusky, "Truck Drivers Are Human, Too," 3; "Ickes and the Trucks," *Motor Carrier* (Dec. 1939): 5.

⁴¹ Jerry Jones, "Company Drivers: Are You Breaking Your Back on 'Buckboard' Seats?" *Overdrive* (Aug. 1966): 46.



Figure 5.1: A neatly dressed truck driver

A typical depiction of a truck driver in the 1940s showed a clean-cut, respectable working man wearing neat overalls and a dapper chauffeur hat. *Driver's Manual for Truck Owners, Superintendents of Fleets, and Drivers* (Cleveland: White Motor Company, 1944), Warshaw Collection of Business Americana, Archives Center, National Museum of American History, Smithsonian Institution.

Furthermore, truckers themselves have always held rather complex notions of their own socioeconomic status that do not fit neatly into strict Marxist categories. The wide range of pay scales in trucking made some drivers downright wealthy, though

rarely.⁴² In a 1968 study of 200 long-haul drivers, sociologists found that 3 of the drivers considered themselves "upper-class," though 128 of the men self-identified as "working-class," and 64 as "middle-class."⁴³ The unclear socioeconomic position of truck drivers often engendered serious status anxiety, as illustrated by a 1964 letter to *Overdrive* from a woman married to an owner-operator livestock hauler. Upon moving to a middle-class neighborhood in a small Kansas town, the couple found an unwelcoming community, "like we were just not good enough to live next to them." This, despite the fact that the couple easily met the standards of a middle-class lifestyle: "We pay our bills on time, go to church and live nice too. We just built a new home, we have almost all new furniture, and it's paid for, and we also have a new car in the garage and that's also paid for."⁴⁴ Verla Bullard, another wife of an independent trucker, wrote a similar letter after reading Vance Packard's *The Status Seekers*, which she noticed did not mention truck drivers. "This could be because the truck driver actually does not fall into any set category in the social register," posited Bullard. Though she herself believed truckers belonged in the "upper middle class," she was well aware that outsiders considered truckers to be deep in the working-class ranks.⁴⁵ Such statements serve as a caution that there can be no single definition of *the* truck driver, and that any discussions of the working-class culture of trucking must take into account a wide variety of often contradictory evidence.

One thing can be stated with confidence, however, which is that many of the men who became truckers in the 1930s and 1940s were *rural*, and they brought to trucking culture a distinct sense of rural identity that continued, if in modified form, into the postwar period. Hard times on the farm drove many men into trucking in the 1930s, but even during the postwar years of high farm prices, many young rural men became truckers. In Kansas in 1950, for instance, the trucking industry provided the second-

⁴² Byron Guise, "Men on the Road," *Kansas Transporter* (Oct. 1972): 12.

⁴³ Edwin G. Flittie and Zane P. Nelson, "The Truck Driver: A Sociological Analysis of an Occupational Role," *Sociology and Social Research* 52:3 (1968): 209. John F. Runcie found a similar pattern in a survey of 150 New Jersey union drivers; although none of his respondents identified as "upper-class," 55% were "working-class," 5% were "middle-working-class," and 39% were "middle-class." John F. Runcie, "Social Group Formation in an Occupation: A Case Study of the Truck Driver," (Ph.D. diss., University of Michigan, 1971), 226.

⁴⁴ A Trucker's Wife to the Editor, *Overdrive* (Oct. 1964): 16.

⁴⁵ Verla Bullard, "Social Status of the Truck Driver," *Overdrive* (Feb. 1971): 55-6.

highest number of jobs in the state, behind only agriculture.⁴⁶ This was partly due to the fact, explored in previous chapters, that agriculture became increasingly dependent on trucking rather than railroads for shipping goods to market. As improved highways made it possible for those goods to move much farther than before, it also became more difficult for farmers to take the time to do their own trucking, making farm-to-market hauling a full-time occupation in its own right. In 1954, for instance, a pair of agricultural economists noted that even though farmers owned 2.5 million out of 9.2 million trucks registered in the United States, only 35 percent of farmers owned a truck. Furthermore, most of those trucks were small straight trucks, unsuited for very long hauls, meaning that most farmers relied on for-hire truckers with larger equipment to do their hauling in this period.⁴⁷ Another key factor was the social process by which many drivers entered the trucking industry in the postwar period. Although formal driver-training schools existed from the earliest days of long-haul trucking, a significant percentage of drivers in the postwar years learned to drive from a relative or friend; in two sociological studies from the late 1960s, scholars found that approximately one of every three drivers was related to another driver who had convinced and trained him to enter the occupation.⁴⁸ Like often breeds like, and fathers who had left the farm to become truckers in the 1930s commonly brought their sons into trucking after the war (see **Figure 5.2**).

⁴⁶ "Kansas Motor Carriers Plan 15th Annual Convention," *Wichita Eagle*, Sep. 3, 1950; "Trucking Represents Second Largest Industry in Kansas," *Wichita Eagle*, Sep. 28, 1952.

⁴⁷ Donald E. Church and Margaret R. Purcell, "From Farms to First Market," in *USDA, Yearbook of Agriculture, 1954: Marketing* (Washington: GPO, 1954), pp. 87-92.

⁴⁸ Flittie and Nelson, "Truck Driver," 207; Runcie, "Social Group Formation," 146.



Figure 5.2: Joe and Jess Jaca of Jaca Truck Lines

Joe Jaca (left), son of Jess Jaca (right), followed in his father's footsteps as a bull hauler out of McDermitt, Nevada. Photo taken May 1981 by Carl Fleischauer; "Buckaroos in Paradise" collection, American Folklife Center, Library of Congress, NV81-CF3-17.

Furthermore, as industrialized agriculture created larger but fewer farms in the postwar period, trucking became one of the only available alternative occupations for rural men who might otherwise have been farmers. This helps explain why the Interstate Commerce Commission found in 1978 that the "typical owner-operator [truck driver] ... is a male residing in Iowa."⁴⁹ For example, writer Frederic Will asked a man named Chuck how he had become a trucker in the 1960s: "I'd been brought up on a farm, back-country, real quiet. I'd handled farm vehicles but I got out onto the highway pretty much by accident, helping a farmer haul potatoes.... I signed on with a refrigerated foods company out of Louisville... and that was that. It was the best work I could find."⁵⁰

⁴⁹ Interstate Commerce Commission, *The Independent Trucker: Nationwide Survey of Owner-Operators* (Washington, DC: ICC Bureau of Economics, 1978), 5.

⁵⁰ Frederic Will, *Big Rig Souls: Truckers in America's Heartland* (West Bloomfield, MI: A & M, 1992), 129.

Especially for rural men with little education, truck driving was often one of the only work opportunities available. As Kevin, a truck driver from rural Maine, told a sociologist in the early 1990s: "Where I live, you either farm, log, or drive a truck. There is nothing else."⁵¹ Drivers for J. B. Hunt, stationed in rural Arkansas, made a similar point in the early 1990s; as Charlie Watts told business historian Marvin Schwartz, "there's easier ways to make a living," but "there are no jobs in this part of the country where you can make nearly fifty thousand dollars a year."⁵² Such drivers recognized the limited range of their choices in an economic world not entirely of their own making, yet in choosing to become truck drivers they also carved out a space in that world where economic independence at least seemed possible.

Above all, long-haul trucking provided many rural men the chance to maintain a sense of rural identity and rootedness in an urban-industrial world. Country music artists and marketers were among the first "outsiders" to recognize this in the 1940s, '50s, and '60s, which helps explain why nearly all trucking songs are country songs. Trucking songs emerged within country music, a commercial form of entertainment distinguished primarily by its reliance on the lived experiences of rural people (particularly southern whites, at least in its earliest inceptions) as the inspiration for its tales and sonic textures.⁵³ In particular, the sound of chugging steam locomotives was clearly a direct stimulus for the basic 4/4 rhythm of most country songs, and lyrics about freight trains defined the career of many an early country singer, from Jimmie Rodgers ("the Singing Brakeman") to Roy Acuff (who imitated a steam whistle in his version of

⁵¹ Bruce Patrick Day, "The Role-Set of the Truck-Driver: Issues of Worker Autonomy, Ideology, and Identity" (Ph.D. diss., University of New Hampshire, 1996), 244-5.

⁵² Schwartz, *J. B. Hunt*, 80.

⁵³ The word "inspiration" is key here, since we can by no means take country music to be a faithful "mirror" of the actual historical experiences of rural people. Recorded country music has always been, after all, an inherently commercial art form—artists and record producers have always sought to make money from their work rather than make objective statements about rural life. Nonetheless, one of the most successful methods of getting rural people to buy country records (and rural people were the main buyers of those records until quite recently) was to tell stories that at least *seemed* authentic to rural ears. An entire literature exists on this problem; see James C. Cobb, "Rednecks, White Socks, and Piná Coladas? Country Music Ain't What It Used to Be and It Really Never Was," *Southern Cultures* (Winter 1999): 41-50; Richard A. Peterson, *Creating Country Music: Fabricating Authenticity* (Chicago: University of Chicago Press, 1997); Cecilia Tichi, *High Lonesome: The American Culture of Country Music* (Chapel Hill: University of North Carolina Press, 1994); Bill C. Malone, *Don't Get above Your Raisin': Country Music and the Southern Working Class* (Urbana: University of Illinois Press, 2002).

"Wabash Cannonball").⁵⁴ The first trucking songs emerged from this tradition of country artists singing about what they saw and knew best from their daily lives, which was quite often a railroad. In fact, the first known trucking song, "Wreck on the Mountain Road" recorded by the Red Fox Chasers in 1928, was simply a parody of the traditional country-folk train ballad, "Wreck of the Old '97."⁵⁵ The first original song about truck driving, however, came in 1939 when Cliff Bruner and His Boys recorded "Truck Driver's Blues" by Ted Daffan.⁵⁶

Daffan never drove a truck, but he saw in truck drivers an untapped market for country music about trucking. As he later recalled, he had been dining in a roadside café when he noticed that truck drivers walked in, "headed for the juke box and put a nickel in" to hear country tunes. Daffan "realized that no one had ever written a song about [truck drivers] and that such a song would have a ready-made audience."⁵⁷ Recorded as a slow western swing tune by Cliff Bruner's band, the song empathized with a driver who was "feelin' tired and weary" as he pulled in to see his "honky-tonk gal," lyrics that helped sell 100,000 records, primarily to jukebox vendors.⁵⁸ The timing was felicitous, as the jukebox had recently become "Big Business," as a *New York Times* reporter noted in 1941, with at least 300,000 "automatic phonographs" in operation that year, grossing an estimated \$90,000,000.⁵⁹ Bigger truck driving hits followed on the tails of Daffan's tune, particularly "I'm a Truck Driving Man" by Art Gibson (1947), and Terry Fell's "Truck Driving Man" (1954). Besides being a rollicking harmonica-driven tune, Fell's "Truck

⁵⁴ Nolan Porterfield, *Jimmie Rodgers: The Life and Times of America's Blue Yodeler* (Urbana: University of Illinois Press, 1979); Bill C. Malone, *Country Music U.S.A.*, rev. ed. (Austin: University of Texas Press, 1985); Norm Cohen, *Long Steel Rail: The Railroad in American Folksong* (Urbana: University of Illinois Press, 1981).

⁵⁵ Joe Fodor, "Truck Song, 1928-1965: 'Wreck on the Old Mountain Road' to 'Giddyup Go'" (draft of an unpublished paper), Trucking Songs Subject File, CMHF Library, p. 3. Many later trucking songs were likewise reworkings of classic train songs, such as "Big Wheel Cannonball" in place of "Wabash Cannonball" (Vaughan Horton, "Big Wheel Cannonball," performed by Dick Curless, Capitol 2780). Several country songs appeared in the 1930s with the word "trucking" in their titles, though the reference was most commonly not to motor transportation but to a style of jazz dancing and / or an unprintable word that rhymes with "trucking." One of the best is "Everybody's Truckin'," performed by the western swing band The Modern Mountaineers; another is "Let's Get Drunk and Truck," recorded in 1936 by the Harlem Hamfats.

⁵⁶ Ted Daffan, "Truck Driver's Blues," performed by Cliff Bruner and His Boys, Decca 5725.

⁵⁷ Dorothy Horstman, *Sing Your Heart Out, Country Boy: Classic Country Songs and Their Inside Stories, by the Writers Who Wrote Them*, 3d rev. ed. (Nashville: The Country Music Foundation, 1986), 326.

⁵⁸ Fodor, "Truck Song," 4.

⁵⁹ Lewis Nichols, "The Ubiquitous Juke Box," *New York Times Magazine*, Oct. 5, 1941, 22.

Driving Man" used an ingenious marketing device, referring to itself being played on a truckstop jukebox in the chorus ("I'll put a nickel in the jukebox / And play the "Truck Driving Man").⁶⁰ Though Fell's recording of the song was only a moderate hit, it would later be covered by dozens of established country artists, including Jimmy Martin, Glen Campbell, and George Hamilton IV. By the early 1990s the song had sold an estimated five million copies.⁶¹

In the 1960s trucking songs would transcend their jukebox orientation and contribute significantly to country music's efforts to become the nation's working-class music. Often referred to as "countrypolitan" or "the Nashville Sound," much of the country music that was recorded in the 1960s sought to reach out to broader audiences by discarding the "raw, nasal 'hillbilly' sound, alien to urban ears."⁶² Particularly under the guiding hands of record producers Owen Bradley and Chet Atkins, country artists such as Roger Miller, Kitty Wells, Patsy Cline, and Ernest Tubb scored giant hits by minimizing the use of twang and maximizing the use of smooth vocal choruses, clean electric guitars, tight drums, and lush orchestral arrangements.⁶³ As a consequence, country music, which had started its career denigrated by urbanites as "hillbilly music," accounted for four out of ten record sales in 1966.⁶⁴ The growth in sales was due not only to savvy record producers and high-quality artists, but to the rapid spread of all-country music radio stations in the 1960s and '70s. Country music had long been a staple of radio programming, particularly on Atlanta's WSB, Chicago's WLS (known for the *National Barn Dance* show), and Nashville's WSM (of *Grand Ole Opry* fame). But each of these

⁶⁰ Art Gibson, "I'm a Truck Driving Man," Mercury 6065; Terry Fell, "Truck Driving Man," RCA Victor "X" 0010. Fell was not the first to think of this; the Milo Twins recorded "Truck Driver's Boogie" in 1948 and included a similar self-reference to their song being played on a "juke." Edward and Edwin Milolen (The Milo Twins), "Truck Driver's Boogie," Capitol 40138.

⁶¹ Fodor, "Truck Song," 7-8.

⁶² "The Gold Guitars," *Newsweek*, Apr. 4, 1966, 96.

⁶³ Paul Hemphill, *The Nashville Sound: Bright Lights and Country Music* (New York: Simon and Schuster, 1970); Steve Waksman, *Instruments of Desire: The Electric Guitar and the Shaping of Musical Experience* (Cambridge, MA: Harvard University Press, 1999), 75-112; Malone, *Country Music, U.S.A.*, 256-8.

⁶⁴ "Country Music Snaps Its Regional Bounds," *BW*, Mar. 19, 1966, 96. The commercial success of the Nashville sound did not arrive without protest from country musicians and fans who preferred the twang, but as Richard Peterson and others have pointed out, the tension between maintaining "authenticity" and selling popular records has always been and probably always will be key to the music's identification as a distinct genre. Peterson, *Creating Country Music*; Robert Cantwell, *Bluegrass Breakdown: The Making of the Old Southern Sound* (Urbana: University of Illinois Press, 1984); Nicholas Dawidoff, *In the Country of Country: People and Places in American Music* (New York: Pantheon Books, 1997).

stations merely interspersed country music within a much broader spectrum of music, from light classical to rock and roll. The first radio station to feature an all-country format was KDAV in Lubbock, Texas, starting in 1953. A decade later, the Country Music Association sponsored a nationwide survey of country music radio listeners, finding them to have significant loyalty to the genre as well as impressive disposable incomes that would appeal to advertisers. Within a few years, the all-country music station "moved *uptown* from *downhome*," with stations cropping up all over the country to serve northern as well as southern, urban as well as rural listeners. Many stations that converted to the all-country format saw their ratings jump dramatically, particularly those in urban markets already saturated with rock and roll stations.⁶⁵

It was within this "countrypolitan" context that trucking songs became a sizeable sub-genre in their own right, after the 1963 release of Dave Dudley's recording of "Six Days on the Road."⁶⁶ Despite being sung by a previously obscure artist from Spencer, Wisconsin, "Six Days on the Road" hit #2 on the country charts and #32 on the pop charts. The fact that Dudley professed to be a "Yankee," and that his song first became popular on Milwaukee radio stations, was a significant indicator of the changing market orientation of 1960s country music; the new listeners wanted modern-sounding music with a rural sensibility, not "hillbilly" music.⁶⁷ The song was written and performed to be a hit—to appeal not only to truck drivers with nickels to spare, but to a much broader audience who would see in the truck driver, rather than the railroad man, a "new folk hero."⁶⁸ Key to this strategy was the song's shearing off of the nostalgic overtones that characterized so much of the train song oeuvre; the song was hard-driving, modern, even industrial in its sound and story, as it sought to make the lived experiences of rural

⁶⁵ George O. Carney, "Spatial Diffusion of the All-Country Music Radio Stations in the United States, 1971-74," *JEMF Quarterly* 13 (Summer 1977): 58-66; "C&W Pulse Published for 24 U.S. Markets," *CMA Close-Up* (Sep. 1965): 1.

⁶⁶ Earl Green and Carl Montgomery, "Six Days on the Road," performed by Dave Dudley, Golden Wing GW3020.

⁶⁷ Dixie Deen, "Six Days on the Road Puts Ravin' Dave Dudley on Country Music Map," *Music City News* 4 (July 1966): 11.

⁶⁸ Robert Shelton, "Meet a New Folk Hero, the Truck Driver," *New York Times* (hereafter *NYT*), Dec. 4, 1966, D33.

people relevant in a postwar context.⁶⁹ Especially important in this respect was the song's signature sound—a combination of a mildly distorted "fuzz box" electric guitar riff, a "tick-tack" bass line, and the deep baritone vocals of Dudley.⁷⁰ As Dudley put it, "that shotgun guitar came through real good," giving the song an electric energy that has brought sales to date of over one and a half million records and inspired dozens of covers by artists as diverse as Junior Brown, Taj Mahal, and Country Joe McDonald.⁷¹

Along with the "shotgun guitar" sound, "Six Days on the Road" brought something new to trucking music: it was based in the experiences of actual truckers. The men who penned the song, Earl Greene and Carl "Peanut" Montgomery, were drivers who had spent years hauling flooring products from Tuscumbia, Alabama, up and down the eastern seaboard. The reference to having "Georgia overdrive" came from their familiarity with throwing a truck's transmission into neutral on a steep downgrade on Highway 67 into Decatur, Alabama.⁷² Other terms in the song conveyed a similar familiarity with real trucker lingo and concerns—"Jimmy" (GMC truck), the ICC, "little white pills" (amphetamines), log books, and weigh scales. "Six Days" became an instant hit with truckers who appreciated a song that had more to do with driving than stopping at truck stops, as well as with a wider audience who found the lingo fascinating.

The remarkable success of "Six Days on the Road" encouraged other artists and producers to record trucking songs as part of an effort to make country music that appealed simultaneously to rural and urban audiences. One key figure was Don Pierce, the owner of a specialty Nashville record label, Starday Records. Pierce's Starday sold

⁶⁹ On nostalgia in train songs, see Shane Hamilton, "Trains Are Like Flowers: Nature and Technology in Traditional Bluegrass Music," *OASIS* (Feb. 2003): 1-32; Vivien Green Fryd, "'The Sad Twang of Mountain Voices': Thomas Hart Benton's Sources of Country Music," *South Atlantic Quarterly* 94:1 (Winter 1995): 301-335.

⁷⁰ Dudley's deep baritone was the reason he was selected by record producer Jimmy Newman to record the song; Newman thought it essential to have a manly voice on a trucking record. Dave Dudley, Interview by Daniel Zwerdling, on National Public Radio's *All Things Considered*, Aug. 30, 1997, transcript, Dave Dudley File, CMHF Library, p. 5. Similarly, Dick Curless was chosen to sing "Tombstone Every Mile" because the song's writer wanted someone who could hit the low notes of the chorus. Dick Curless press release, 8 July 1970, Dick Curless File, CMHF Library, p. 4. In fact, most important trucking singers have sung in the baritone or even bass registers (Red Simpson and Red Sovine being the most obvious examples).

⁷¹ Deen, "Six Days," 11; Fodor, "Truck Song," 19; "Imitation Insures Success," *Music City News* (Sep. 1965): 30.

⁷² Horstman, *Sing Your Heart Out*, 321. Greene and Montgomery may also have chosen to call this action "Georgia overdrive" to avoid the equally common, though more offensive, terms "Mexican overdrive" and "Jewish overdrive."

country music exclusively, unlike larger labels such as Mercury, Columbia, and Decca, where country contributed only a minority of records to catalogs dedicated mostly to pop, jazz, classical, and rock. Pierce was a marketer extraordinaire; among other strategies, he used direct-mail catalog campaigns to reach rural customers and jukebox operators.⁷³ For Pierce, the whole point of recording country music was to sell country music: "Music that doesn't sell [is] obviously music that isn't communicating," he once stated. "You have got to be commercial! A song can involve itself with basic things such as women, drinking, gambling, death, and traveling BUT it's got to have something fresh."⁷⁴ After the release of "Six Days on the Road," Pierce jumped on the chance to sell "something fresh" in the form of trucking music; as Starday producer Tommy Hill later recalled, Pierce "wanted to record every truck song that came through the door."⁷⁵ Among the Starday artists who recorded trucking songs in the 1960s were the Willis Brothers ("Give Me 40 Acres") and Red Sovine ("King of the Open Road," "Teddy Bear").⁷⁶ Another small Nashville label, King Records (which later merged with Starday), produced artists Charlie Moore and Bill Napier ("Truck Driver's Queen") and Coleman Wilson ("Passing Zone Blues").⁷⁷ Meanwhile, labels on the West Coast also contributed to the growing catalog of trucking songs. Many of these were part of the "Bakersfield Sound," distinguished from the Nashville Sound by its unapologetic use of hard-driving guitars, pedal steels, and honky-tonk harmonies (rather than smooth, overdubbed vocal choruses).⁷⁸ Trucking songs from West Coast artists such as Red Simpson, Merle Haggard, Del Reeves, and Kay Adams appealed to working-class listeners who found the "countrypolitan" sound a bit too tame. Red Simpson was perhaps most successful at this approach, recording several full-length trucking albums of lasting quality, although Del

⁷³ "Starday's Unique Concept: A Country Label Exclusively," *Billboard* (Nov. 2, 1963): 73.

⁷⁴ Dixie Deen, "Don Pierce of Starday," *Music City News* (Jan. 1967): 9.

⁷⁵ Fodor, "Truck Song," 20.

⁷⁶ Atlas Artist Bureau press release, "The Willis Brothers," October 1978, Vic Willis File, CMHF Library; Starday/Gusto Records press release, "Red Sovine," October 1978, Red Sovine File, CMHF Library; Jack Hurst, "Red Sovine: Teller of Sad Tales," *Macon (Georgia) Telegraph*, Aug. 2, 1976, 5B.

⁷⁷ Charlie Moore and Bill Napier, "Truck Driver's Queen," King 936; Coleman Wilson, "Passing Zone Blues," King 45-5512.

⁷⁸ Gerald W. Haslam, *Workin' Man Blues: Country Music in California* (Berkeley: University of California Press, 1999).

Reeves was the first artist to score a #1 hit on the *Billboard* country charts with a trucking song—"Girl on the Billboard," recorded in 1965.⁷⁹ In any case, trucking songs helped drive the growing popularity of country music in the period; between 1957 and 1972, at least 300 minor and major trucking hits were recorded by country artists.⁸⁰

Even as trucking songs contributed to the broadening popularity of country music, they continued to appeal directly to truck drivers as a distinct marketing segment. All-night radio shows aimed at truckers helped in this regard. The first such show began in 1969, hosted by Charlie Douglas on WWL in New Orleans. Despite the station's far-reaching power of 50,000 watts, Douglas considered his show to be not "broadcasting" but "narrowcasting": "We point at one guy in one truck going in one direction."⁸¹ Bill Mack started a similar trucker show in 1969 on WBAP out of Fort Worth, Texas.⁸² Encouraged by funding from advertisers such as Cummins Diesel, such shows spread rapidly to dozens of stations across the country in the early 1970s.⁸³ "Big John" Trimble established the most popular all-night truckers-only show in 1977 on WRVA, transmitting from Jarrell Truck Plaza in Doswell, Virginia. Although he played only country music, Trimble claimed his show was not a country music show, but "a truckers' show. I play country music, and other people can listen if they want to. But the show's for the truckers."⁸⁴ With a 50,000-watt signal reaching 32 states, Big John played truckers' requests received by phone or Citizens Band radio—particularly music about the "Five D's: divorce, drinking, death, devotion and desperation," along with songs specifically about trucking, all interwoven with constant countrywide weather reports.⁸⁵

⁷⁹ Walter Haynes and Hank Mills, "Girl on the Billboard," performed by Del Reeves, United Artists 824; Fodor, "Truck Song," 25.

⁸⁰ Neville Raymond, "Hitch Your Truck to a Country Star," *Country Music*, Sep. 1972, 182; "Country Charts," *Cash Box*, Jan. 29, 1966, 52-3. Not all trucking songs have been country; Tom Waits, for instance, penned a number of songs about truckers in the 1970s as part of his beat-poetry inspired phase of writing about recluses and loners. An excellent example is "Diamonds on My Windshield," on *The Heart of Saturday Night*, Asylum 7E 1015.

⁸¹ Blaine Harden, "Big John—Truckers' Favorite DJ," *Washington Post*, Dec. 1, 1979, 4.

⁸² "Bill Mack: Radio Friend of the Trucker," *Open Road and the Professional Driver*, Jul. 1969, 18.

⁸³ "C & W Singer Is Knight's Favorite," *Michigan Trucking Today*, Apr. 1972, Trucking Songs Subject File, CMHF Library.

⁸⁴ "For the Truck Driver on the Road, a Special Radio Show," *NYT*, Dec. 2, 1979, 87.

⁸⁵ Harden, "Big John," 1.

Behind these marketing efforts lay the recognition that truck drivers, as a distinct demographic, *liked* country music. C. O. Bruce, Jr., a trucker from Blum, Texas, wrote in a letter to *Overdrive* in 1966 to complain of radio stations that played light classical music in the early morning hours: "I am sure that there are a lot of truckers who like [light classical], but I believe that 50% more truckers would rather hear country music on the road as it is the only kind you can understand what they are saying.... What we want is country music from 12am to 12am."⁸⁶ The key phrase here was "you can understand what they are saying," indicating truckers' belief that only country musicians wrote songs that spoke to a drivers' real-life concerns. As Lee Tamplen, a driver from Fort Worth, Texas, told *Open Road* magazine in 1978, he listened only to country music "because the other stuff on the radio these days is not worth a damn."⁸⁷ Leo Hayes, whose route regularly took him from Amarillo, Texas, to New York City, claimed that "he [had] always been a country boy and the country will never leave him," which led him to complain that "one of the greatest misfortunes bestowed on mankind is that New York doesn't have a country station."⁸⁸ Vern Husband, an owner-operator from Hooker, Oklahoma, tried to avoid such misfortunes by keeping a list of the nation's all-country radio stations in his cab "so I know where to tune in wherever I am."⁸⁹ Of course, if a trucker could not find a decent country station, he could always pop a Merle Haggard tape into his 8-track stereo—a popular piece of trucking equipment declared by International Harvester's marketing department to be a "necessary" (necessary accessory) in 1966.⁹⁰

To the country music industry, it was clear that trucks and country "went together" by the late 1970s. Country musicians and record producers took up the truck driver as the new rural working-class folk hero, replacing the cowboy, the dirt farmer, the coal miner, the steel-driving man, and the train engineer of earlier generations. In a

⁸⁶ C. O. Bruce, Jr. to the Editor, *Overdrive* (Aug. 1966): 7-8.

⁸⁷ "Truckers Everywhere Love Country Music," *Open Road and the Professional Driver*, Sep. 1978, 30.

⁸⁸ Raymond, "Hitch Your Truck to a Country Star," 179

⁸⁹ "Truckers Everywhere Love Country Music," 30.

⁹⁰ Marketing Dept., International Harvester Co., Motor Truck Division, General Letter MT-711, "Automotive Stereo Tape Player," Sep 30, 1966, International Harvester Company, Truck Circular Letters, Wisconsin Historical Society, Madison, WI, (hereafter IH Truck Circular Letters) Box 9.

rural industrial landscape where small farms and long trains had been replaced by agribusinesses and interstate highways, the truck driving man was a more fitting symbol on which to hang a new agro-industrial mythology based on the work culture of rural men. As we have seen, part of this agro-industrial myth was shaped by the belief that a trucker could maintain at least some sense of economic independence akin to that imagined for the small farmers of a bygone era. But there were other messages contained in country songs, and trucker culture more broadly, that comported well with rural ideals of manhood in the postwar economic context.

The Wandering Man

Country trucking songs sold a distinctively rural vision of masculinity, informed by a belief that a real man could and should wander (geographically and sexually) while simultaneously maintaining a faithful connection to his home and family. The idea of the "rambling man" has been a consistent theme in commercial country music, from Jimmie Rodgers's statement that "when a man gets blue, he grabs a train and rides," to Hank Williams's declaration that the Lord had made him a rambling man, to Steve Earle's penchant for reading from Kerouac's *On the Road* during his live performances.⁹¹ Just as prominent in country music has been the importance of settling down to a stable home and family life, from songs waxing nostalgic for the "old homeplace" to moralistic warnings against marital infidelity and the lure of the honky-tonk.⁹² These contradictory themes worked their way readily into trucking songs; from Johnny Dollar's "there ain't no place that I ain't been" to Red Simpson's plaintive worry about his son "not doing too good in school," the truck driving man's torn allegiance to roaming and remaining home served as the narrative fuel for many a country song.⁹³ But this tension did more than

⁹¹ Malone, *Don't Get above Your Raisin'*, 117-48; Tichi, *High Lonesome*, 51-78; Jordan Kessler, review of Steve Earle concert at the Knitting Factory, New York, New York, <<http://www.popmatters.com/music/concerts/e/earle-steve-020414.shtml>> (May 1, 2002).

⁹² Malone, *Don't Get above Your Raisin'*, 53-88; Tichi, *High Lonesome*, 19-50.

⁹³ Charles Fields, James Kirchstein, and Donald Riis, "Big Rig Rollin' Man," performed by Johnny Dollar, Chart Records 1057; Tommy Collins, "Roll, Truck, Roll," performed by Red Simpson, Capitol ST 2468.

just help sell records; it also helped truck drivers negotiate a meaningful sense of manhood, an explicitly rural masculinity rooted in a deep resistance to becoming a "desk-pilot" or a "factory hand" simply for the sake of a stable home life.

The rambling man imagined by Jimmie Rodgers and Hank Williams used a train to see the wider world. Songs such as Rodgers's "Brakeman's Blues," based in his own experience as a brakeman, told of riding the rails from "sunny Tennessee" to Portland, Maine. "It's good times here," sang Rodgers, "but it's better down the road." The train brought excitement and mobility, as Rodgers's wife later recalled: "As freight brakeman, young Jimmie Rodgers thought he was doing fine. He was going places, seeing things, doing things."⁹⁴ The railroad, as landscape historian John Stilgoe has written, brought the crackling electric energy of urban modernity to the turn-of-the-century rural landscape; for many a country boy, a train ticket was a ticket out of boredom and stasis and into the scurrying efficiency of the modern metropolis.⁹⁵ But for many rural men, working for the railroad brought not the excitement of modernity but the emasculating demands of systematized, clock-based wage labor.⁹⁶ A man could ramble on a train, but potentially at the cost of losing his rural roots.

Trucking culture, on the other hand, was infused with the romance of the "open road," a space of mobility where a man could imagine himself being his *own* man. This was the central theme of countless trucking songs, from Asleep at the Wheel's "I've Been Everywhere" (in which the narrator rattles off a seemingly endless list of places across the nation that he's visited) to Dave Dudley's "Rollin' Rig" (which tells of a trucker's addictive need to roam, something his wife and children simply cannot understand).⁹⁷ The "long white line" as addiction, something that truckers must follow at all costs,

⁹⁴ Horstman, *Sing Your Heart out, Country Boy*, 355.

⁹⁵ John R. Stilgoe, *Metropolitan Corridor: Railroads and the American Scene* (New Haven: Yale University Press, 1983), esp. 167-221.

⁹⁶ Walter Licht, *Working for the Railroad: The Organization of Work in the Nineteenth Century* (Princeton: Princeton University Press, 1983); Ronald L. Lewis, *Transforming the Appalachian Countryside: Railroads, Deforestation, and Social Change in West Virginia, 1880-1920* (Chapel Hill: University of North Carolina Press, 1998), 131-84. On the time-discipline of industrial labor, see also E. P. Thompson, "Time, Work-Discipline, and Industrial Capitalism," *Past and Present* 38 (Dec 1967): 56-97; Daniel T. Rodgers, *The Work Ethic in Industrial America, 1850-1920* (Chicago: University of Chicago Press, 1978).

⁹⁷ Geoff Mack, "I've Been Everywhere," performed by Asleep at the Wheel, United Artists UA-LA038-F; Roy Baham, "Rollin' Rig," performed by Dave Dudley, United Artists / Rice RR-5064.

figured prominently in songs performed by Moore and Napier and Merle Haggard, among others.⁹⁸ The draw of the open road, however, was much more than a country music phenomenon; it was often the most important value that a truck driving man attached to his work. As an anonymous trucker told writer/photograph Robert Krueger in 1975, "[The highway] is sort of the last frontier, where a guy can roam, be his own boss, and not listen to a whole lot.... If I want to go someplace, I just catch a load going there."⁹⁹ Almost any interview with a trucker will elicit a similar response, as sociologist John Runcie found in the late 1960s: "I get to see different parts of the country; I get to see sunrises if I am working at that hour. In a factory all you can see is the factory."¹⁰⁰ Work on the road was still work, though it was occasionally punctuated by moments of astounding beauty; but more importantly, that work was not performed under the constraints of walls, foremen, or managers. As one woman described her husband's love of driving in a 1965 letter to *Overdrive*, "'He has been offered office jobs and each time we talk it over again together and decide against it. We both know that he could never be happy behind a desk."¹⁰¹ For a real truck driving man, the long white line was addictive precisely because of the allure of escaping the watchful eyes of authority figures. As a trucker named Chuck, who was born in a small Texas town, told writer Axel Madsen in the early 1980s: "What I like about truckin' is that even if you drive for someone else, there ain't anybody standing over you when you're out there on the highway."¹⁰² When a man's workplace was the road, there were no orders from the foreman or middle management and no line speed-ups or stopwatch-toting scientific managers.

Trucking firms attempted to deploy technologies in the cab in the hope of gaining some control over the work process of a trucker, though with little success. The tachograph was a good example. Invented in the 1920s but not introduced to U.S. markets until 1940 by the Sangamo Electric Company, the tachograph was intended to

⁹⁸ Abner Buford, "Long White Line," performed by Charlie Moore and Bill Napier, King 45-6004; Merle Haggard, "White Line Fever," Capitol ST 384.

⁹⁹ Robert Krueger, *A Gypsy on 18 Wheels: A Trucker's Tale* (London: Praeger, 1975), 13.

¹⁰⁰ Runcie, "Social Group Formation," 161.

¹⁰¹ Mrs. Wilfred Abernathy to the Editor, *Overdrive* (Jan. 1965): 6.

¹⁰² Madsen, *Open Road*, 17.

provide an objective measure of a driver's productivity, by measuring a truck's distance traveled, its speed, and the frequency and duration of stops, recording these data on a wax chart (see **Figure 5.3**).¹⁰³ As an advertisement for Wagner Electric's version proclaimed in 1956, a tachograph was supposed to provide clear evidence of a trucker making "unscheduled stops," a point graphically presented as a trucker drinking coffee and chatting with a truck-stop waitress.¹⁰⁴ Tachographs proved easy for truckers to outwit, however, as the manager of a trucking firm found in 1960 when he noted that "90% of the cutting knives in the doors of the tachograph clocks have been removed and destroyed by drivers." Besides simply breaking the machine, drivers could leave the clock open while driving, or set the clock back or ahead, which effectively falsified the records provided by the machine. The company manager was quite familiar with these tactics, stating that he knew "there are exactly 41 ways that tampering has appeared on these clocks and every one of them [is] known to management." But since the manager could not actually ride in the cab with each driver, there was no way to prevent such tampering.¹⁰⁵ Some trucking firms would occasionally send out "road checkers" in unmarked cars to observe their drivers in action, looking for excessive speed, unnecessary passing, or use of faulty equipment, but even in such situations drivers often claimed to be able to "'smell' a road-checker a mile away."¹⁰⁶ Tachographs and road checkers could not bring factory-style discipline to the cab.

¹⁰³ R. H. Kimes, et al., "Recording Device for Motor Vehicles," U. S. Patent No. 1,471,850, Oct. 23, 1923; "Graphic Clocker," *BW*, Dec. 21, 1940, 36; "Watchman in the Cab," *Power Wagon* (Apr. 1956): 18-9, 47; International Harvester Co., Motor Truck Division, Motor Truck Circular 161, "Tachograph," Dec. 15, 1961, IH Truck Circular Letters, Box 8.

¹⁰⁴ Advertisement for Wagner Electric Corporation, "5 Ways that Tachographs Can Improve Your Fleet Operation," *Power Wagon* (Mar. 1956): 9.

¹⁰⁵ G. M. Nequette (Vice President of Safety and Personnel, Central Wisconsin Motor Transport Company) to All Drivers, Terminal Managers and Mechanics, "Tampering with Tachograph Clocks," Jun. 15, 1960, International Brotherhood of Teamsters, Local 695 (Madison, WI) Records, Wisconsin Historical Society, Madison, WI (hereafter IBT 695 Records), Box 13, Folder 14.

¹⁰⁶ Wayne G. Broehl, Jr., *Trucks, Trouble, and Triumph: The Norwalk Truck Line Company* (New York: Prentice-Hall, 1954), 178. In more recent times, companies have deployed satellite tracking systems to much greater effect. See Matthias Roetting et al., "When Technology Tells You How to Drive: Truck Drivers' Attitudes towards Feedback by Technology," *Transportation Research Part F: Traffic Psychology and Behaviour* 6 (Dec. 2003): 276.

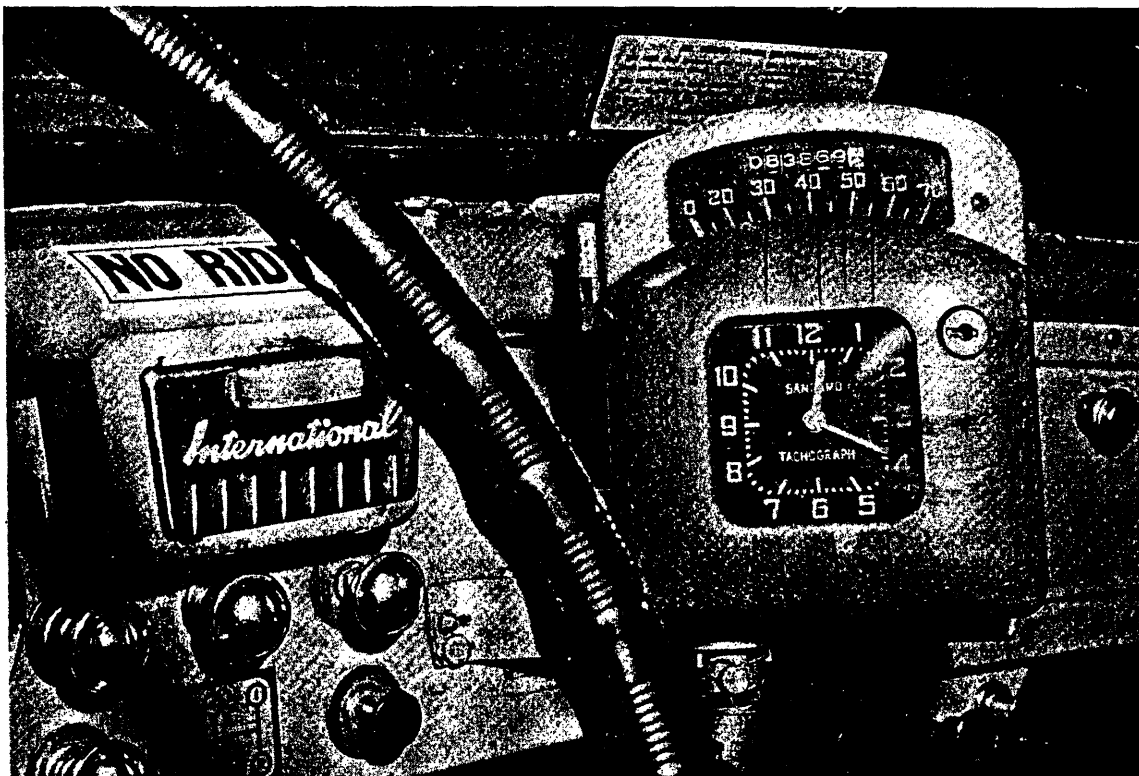


Figure 5.3: A tachograph, or "Watchman in the Cab"

The Sangamo Electric Company marketed tachographs such as this beginning in the 1940s, intending to provide trucking fleet managers with a means of "observing" truck drivers while on the road. "Watchman in the Cab," *Power Wagon* (Apr. 1956): 18.

But for all the allure of "movin' on," truckers did not cruise down an open road free of constrictions or demands. After all, no matter how many states a trucker passed through, he was always doing so on the way to picking up or delivering a load. Nonetheless, truck driving was different from most other industrial jobs in one key respect: a trucker's time was dictated primarily by the task at hand, rather than by the clock. When a driver sold his labor time to an employer, that time was valued not by the hour but by the mile. In negotiating a wage rate, then, truckers and employers had to take into account issues that did not arise in a factory context, such as time required for sleep, mechanical breakdowns, impassable highways, and so on.¹⁰⁷ When the load and

¹⁰⁷ National War Labor Board Trucking Commission, "In the Matter of Southeastern Area Employers' Negotiating Committee and International Brotherhood of Teamsters," Nov. 26, 1943, National War Labor Board Records, RG 202, Trucking Commission Records (hereafter RG 202), Miscellaneous Records, 1942-45, Entry 305, National Archives II, College Park, MD, Box 2423, Folder 1.

the road dictated how a driver's time would be spent, a trucker's bodily rhythms had to be flexible enough to adjust both to periods of intense work and to periods of absolute inactivity. As Otto Riemer noted, trucking often involved an exasperating game of hurry-up-and-wait: "You break your ass getting there, only to find that the consignee is short on storage space and you will have to wait until the next day to unload."¹⁰⁸ A trucker's time was most certainly not his own; even at home, a trucker could expect a call from a dispatcher at any moment, ordering him back on the road. Of course, such calls could theoretically be refused, but as one trucker put it, "I go when they call if I want to make money."¹⁰⁹ Such lack of time-discipline could be seen as a distinct disadvantage; after all, a factory worker who sold his or her labor time to an employer did so with the recognition that once the whistle blew, the worker received leisure time to do with as he or she wished. Furthermore, the commodification of labor time made it possible for workers to wrest a shorter workday from management, a useful organizing tool in the early days of the American labor movement.¹¹⁰ On the other hand, the task-orientation of work in trucking could be a significant source of masculine pride, providing truckers a sense of control over their work, reminiscent of that experienced by pre-industrial artisans and farmers.¹¹¹ Charles Seetin, for instance, took his farmer's work ethic and sense of time into trucking when he began hauling his potatoes to market in the 1930s, and also after he purchased Capitol Truck Lines in 1945: "He often worked around the clock, or through the weekend, without concern for the effort expended. He was working for himself, in a business he loved."¹¹² Like the work required to run a farm, a trucker's

¹⁰⁸ Riemer, *Hammer Down*, 30.

¹⁰⁹ Day, "Role-Set," 123.

¹¹⁰ Thompson, "Time, Work-Discipline"; Thomas Dublin, *Women at Work: The Transformation of Work and Community in Lowell, Massachusetts, 1826-1860* (New York: Columbia University Press, 1979); Roy Rosenzweig, *Eight Hours for What We Will: Workers and Leisure in an Industrial City, 1870-1920* (Cambridge: Cambridge University Press, 1983).

¹¹¹ On manliness and pre-industrial task-orientation, see Merritt Roe Smith, *Harpers Ferry Armory and the New Technology: The Challenge of Change* (Ithaca: Cornell University Press, 1977), esp. 65-6. On farmers and task orientation, see Gerrit Wildenbeest, "'Keeping up with the Times': Time and Its Rhythms in the Countryside," *Netherlands Journal of Social Sciences* 24 (Oct 1988): 132-145; Michael O'Malley, *Keeping Watch: A History of American Time* (Washington: Smithsonian Institution Press, 1990).

¹¹² Doris Quinn, "Portrait of a Trucker," *Kansas Transporter* (Nov. 1959): 12-3.

work was not made any easier by its task-orientation; nonetheless, it could be far more satisfying to a man's sense of self than factory work.¹¹³

The appeal of mobile, task-oriented work was not solely confined to men. Women who wished to defy the traditional definition of woman's work as indoor work joined the trucking work force in increasing numbers, particularly in the 1970s. Prior to that decade, women drivers were a rare sight in trucking; in a 1933 survey of 4,000 drivers, not a single woman was employed as a driver, though around 400 worked for trucking firms as cashiers, bookkeepers, and clerks.¹¹⁴ In 1955, the trade journal *Power Wagon* noted that Martha Thomas was only one of three female drivers in the state of Florida.¹¹⁵ As late as 1979, a survey of over 9,000 drivers found only 57 women employed as truckers.¹¹⁶ The exclusion of women from the trucking workforce can partly be explained by policies of the International Brotherhood of Teamsters, which excluded women from membership until government pressure forced a change during World War II. Even afterwards, many Teamster locals instituted separate pay scales and seniority rules for men and women, often designating "men's jobs" (driving) and "women's jobs" (inside work).¹¹⁷

It was precisely this distinction, however, whether codified or unspoken, that drew some defiant women into trucking in the 1960s and 1970s. Within a year of the publication of Betty Friedan's *Feminine Mystique*, a flood of letters arrived at the desk of the editor of *Overdrive* from women who saw trucking as a means of liberation from the confines of the home or the factory. A good example was this 1964 statement from one Linda Buis, who team-drove with her husband: "'Company policy' tells me that I should be content in our little cottage, to keep a lamp in the window and stick to my knitting....

¹¹³ Michael O'Malley, "Time, Work, and Task Orientation: A Critique of American Historiography," *Time and Society* 1, no. 3 (1992): 341-58.

¹¹⁴ Don Q. Crowther and Mortier W. LaFever, "Wages and Hours of Labor in the Intercity Motor Bus and Truck Transportation Industries, July 1933," *Monthly Labor Review* 38 (Jun. 1934): 1433.

¹¹⁵ "Trucker's Wife Shares Long-Haul Distance Driving," *Power Wagon* (Mar. 1955): 14.

¹¹⁶ D. Daryl Wyckoff, *Truck Drivers in America* (Lexington: Lexington Books, 1979), 77.

¹¹⁷ Leah F. Vosko and David Witwer, "'Not a Man's Union': Women Teamsters in the United States during the 1940s and 1950s," *Journal of Women's History* 13 (Fall 2001): 169-92.

[But] we are both truck drivers and proud of it."¹¹⁸ Though most of a truck driver's working hours were spent in a cab much more confining than even the smallest cottage, the lure of the "open road" was compensation enough for women whose work had traditionally been defined by enclosure. As Monti Tak explained her decision to become a trucker in the early 1970s: "If you know what trucking is, I don't have to explain it to you.... I enjoy traveling and seeing new sights and faces. Like most truckers, I feel closed in if I work indoors."¹¹⁹ Judy Kuncher, "a small platinum-blond woman of 27 years and 124 pounds," took a driving job for "the freedom; that's what I like. My time is my own." While appreciating the degree of control over her time, she had originally been drawn to trucking by the stories her husband told of seeing the West Coast—"I wanted to get out there, too."¹²⁰ Movement, so central to the masculine ideal of meaningful work, was also what drew Marilyn Larson to drive a milk truck in the early 1970s: "I tried an assembly line job and didn't care for it.... [Driving] gives me a chance to be outside."¹²¹ Such defiance of gender stereotypes inspired the 1966 hit song "Little Pink Mack," in which Kay Adams sneered that she was a "gear-swapping mama" who didn't "know the meaning of fear."¹²² But the reactions of men to women drivers belied the fact that wandering was at its core reserved for men; women who worked not only outside the home but *outside* were crossing a dangerous line. Men's interpretations of female truckers ranged from the patronizing—such as an article in the *Modern Milk Hauler* that applauded Shirley Genrich for her ability to both drive and yet remain "at heart ... a homemaker [who] likes to cook and bake"—to downright chauvinistic, as when trucker

¹¹⁸ Linda Buis to the Editor, *Overdrive* (Sep. 1964): 15-6. See also Helen Mudd to the Editor, *Overdrive* (Apr. 1964): 15.

¹¹⁹ Quoted in Krueger, *Gypsy on 18 Wheels*, 74-5.

¹²⁰ Judy Klemesrud, "New Breed of Women Driver—Chugging along in an Astro 95," *NYT*, Nov. 10, 1975, 58. It is interesting to note that in nearly every source I have seen on women drivers, their height and weight is mentioned as a contrast to the massive size of the rig they drive, but the difference between a 200-pound man and a 125-pound woman would seem inconsequential when measured against a 15- to 30-ton tractor-trailer.

¹²¹ "Husband-Wife Milk Hauling Team," *Milk Hauler and Food Transporter* (Sep. 1973): 12.

¹²² Chris Darrell Roberts, Jim Thornton, and Scott Turner, "Little Pink Mack," performed by Kay Adams, Tower 269; Bill Friskies-Warren and David Cantwell, *Heartaches by the Number: Country Music's 500 Greatest Singles* (Nashville: Vanderbilt University Press, 2002), 66-7. See also Mary Bufwack, "The Feminist Sensibility in Post-War Country Music," *Southern Quarterly* 22, no. 3 (1984): 135-44.

Charlie Johnson shook his head in disbelief upon sight of Judy Kuncher, exclaiming: "A woman driving a damn big rig like this!"¹²³

Such resistance to the idea of a woman driver may have been influenced by the widespread belief that trucking permitted not only geographical wandering but also sexual deviance. Truck driving men were imagined to have a remarkable gift, even a compulsive need, for sexual conquest as they traveled from one truck stop to another. This myth became firmly established in the country trucking songs of the 1940s with the idea of the beautiful siren-esque truck-stop waitress. Dick Reinhart's "Truck Driver's Coffee Stop" (1941) and Jim Anglin's "Truck Driver's Sweetheart" (1942) set a pattern that would be copied by dozens of country artists over the years, imagining a comely waitress who served hot lovin' along with hot coffee and hot hash.¹²⁴ Songwriters told of truckers with "girlfriends everywhere," of a "Truck Driving Son of a Gun" who liked his women "everywhere I go," of a "Truck Drivin' Cat with Nine Wives."¹²⁵ Cal Martin's "Diesel Smoke, Dangerous Curves" warned of the perils faced by a manly trucker—and the "curves" in question were not those of twisting roads.¹²⁶ The idea of the truck-stop temptress circulated outside of country music, as well; the film *They Drive by Night* depicted Ann Sheridan as a waitress with a "classy chassis." A 1946 article in the *Saturday Evening Post* told of a roadside cafe with "four girls behind the counter, any one of whom might have won a beauty contest of some sort."¹²⁷

Such oblique references to the sexual lives of truckers were tame compared to the stories of prostitution that emerged in the 1960s and 1970s, as truckers told of "lounge lizards" or "pavement princesses" who patrolled truck-stop parking lots offering their services to lonely truckers. *Overdrive* magazine helped publicize the issue in 1961 when it ran a three-page story on the dangers of venereal disease, which editor Mike Parkhurst

¹²³ Marcella Hurley Koch, "Her Producers Accept and Respect This Lady Hauler," *Modern Milk Hauler* (Oct. 1962): 16; Klemesrud, "New Breed of Woman Driver," 58.

¹²⁴ Dick Reinhart, "Truck Driver's Coffee Stop," performed by Jimmy Wakely, Decca 5995; Jim Anglin, "Truck Driver's Sweetheart," performed by Karl and Harty, Okeh 6622.

¹²⁵ Guy Willis and William Brown Ellis IV, "Wheels A-Turning," performed by the Willis Brothers, Starday / Nashville NLP-2052; Dixie Deen and Ray King, "Truck Driving Son of a Gun," performed by Dave Dudley, Mercury 72442; Jim Nesbitt, "Truck Drivin' Cat with Nine Wives," Chart Records 1018.

¹²⁶ Cal Martin, "Diesel Smoke, Dangerous Curves," performed by Doye O'Dell, Intro Records RR-1867.

¹²⁷ Wessel Smitter, "Glamour Boys of the Highway," *Saturday Evening Post*, Feb. 23, 1946, 60.

believed could be mitigated by legalizing prostitution.¹²⁸ A highway rest stop near Darien, Connecticut became notorious in the late 1970s as a home of "highway hookers" who used Citizens Band radios to solicit drivers.¹²⁹ It seems unlikely that most truckers regularly engaged in sexual relations with either waitresses or prostitutes; as one driver put it: "[Truckers] talk of women like all guys do, but it's not a reality, it's dreaming.... They're moving too much.... Maybe if they [had] more time."¹³⁰ Nonetheless, the *belief* that a truck driver had the ability to wander as a sexual being without supervision was probably more important to the masculine culture of trucking than whether or not truckers acted on their urges. As one truck driver's wife wrote to *Overdrive* in 1967, claiming that she approved of her husband's ability to meet women everywhere he went: "My husband is a man, and being a truck driver helps keep him that way."¹³¹ The ability to roam was a defining feature of the truck driving man.

But even if trucking culture writ large defined wandering as manly, a paradoxical dedication to home and family was equally prevalent. When sociologist John Runcie asked a group of drivers in the late 1960s who the most important people were in their lives, the truckers uniformly responded "family."¹³² Statistical surveys consistently showed that a relatively high proportion of truckers in the period were married; Runcie found that in 1960, 85 percent of truckers were married, compared to 71 percent of all men in the general population over the age of 15.¹³³ Daryl Wyckoff's 1979 study found a similar pattern, with only 11 percent of the male truckers he surveyed reporting they were unmarried; this compared to 38 percent of all men over 15 reporting themselves as single, divorced, or widowed.¹³⁴ The reality of the truck driving man as a family man may not have inspired as many country songs as did the truck-stop waitress, but the theme was surely prevalent. Singer Red Sovine became particularly famous for his songs about

¹²⁸ "VD: Still Around, Still Vicious!" *Overdrive* (Oct. 1961): 8-10.

¹²⁹ Michael Knight, "Darien Begins a Crackdown on Prostitutes Who Solicit Truck Drivers by CB Radios," *NYT*, Jul. 16, 1977, 25.

¹³⁰ Terkel, *Working*, 208.

¹³¹ An Understanding Wife to the Editor, *Overdrive* (Dec. 1967): 6-7.

¹³² Runcie, "Social Group Formation," 215.

¹³³ *Ibid.*, 95.

¹³⁴ Wyckoff, *Truck Drivers in America*, 77; U. S. Census Bureau, "Marital Status of the Population by Sex: 1900 to 2002," Statistical Abstract of the United States, 2003, <www.census.gov/statab/hist/HS-11.pdf>.

the family values of truck drivers, especially "Woman behind the Man behind the Wheel" and "Giddy-Up Go."¹³⁵ Dave Dudley, for his part, believed that the theme of a trucker desperate to get home, as explored in "Six Days on the Road," was an essential reason for the song's appeal to truck drivers who "were really a family guy [sic]. And they wanted to get home to the wife and kids. And Labor Day, play in the back yard.... That was the idea."¹³⁶ After all, the narrator of "Six Days on the Road" claimed that he "could have a lot of women," but he wasn't "like some other guys" who would cheat on their wives. Kay Adams, who recorded the "answer" to "Six Days on the Road" with "Six Days Awaiting," amplified this theme, singing that her truck driving man "*better* make it home tonight."¹³⁷ For every song about "moving on," there was another about "coming home."¹³⁸ As in country music more generally, trucking songs imagined rural manhood as a constant negotiation between the poles of promiscuity and fidelity.

Behind this tension lay the simple fact that trucking was, for most drivers, primarily a way to make a living. There might have been easier ways to support a family. As Irene Silah of Trenton, New Jersey, wrote to the National War Labor Board's Trucking Commission in 1943, her husband's pay of \$48 per week, with no overtime provisions, made for "pretty hard sledding, let me tell you."¹³⁹ In the film *They Drive by Night*, Humphrey Bogart's character Paul Fabrini is repeatedly confronted by his wife, who demands that he find "a job with a regular pay envelope" so they can afford to raise a child. When Paul loses his arm in an accident and is no longer able to drive, his wife takes grim satisfaction in the fact that "now he'll be home nights.... Maybe it's worth a right arm." Losing an appendage was not the only option for drivers who wanted a steady

¹³⁵ Red Sovine and Gordon Clifford Grills, "Woman behind the Man behind the Wheel," performed by Red Sovine, Starday Gusto 169; Tommy Hill and Red Sovine, "Giddy-Up Go," performed by Red Sovine, Starday 737; Dixie Deen, "Red Sovine: 'I Didn't Jump the Fence'," *Music City News* (Jun. 1967): 3-4.

¹³⁶ Dave Dudley, Interview by Daniel Zwerdling, on National Public Radio's *All Things Considered*, Aug. 30, 1997, transcript, Dave Dudley File, CMHF Library, p. 3.

¹³⁷ Earl Green, Carl Montgomery, and Earl Montgomery, "Six Days Awaiting," performed by Kay Adams, Tower ST 5033. "Answer" songs were quite common in country music of the 1960s; after a particular song became a big hit, another artist (often an artist of the opposite gender, usually a woman) would record a song with the same tune, but with words from the opposite perspective.

¹³⁸ Johnny Horton and Tillman Franks, "I'm Coming Home," performed by Johnny Horton, Columbia 40813.

¹³⁹ Irene Silah to National War Labor Board, Feb. 3, 1943, RG 202, Entry 316, Records of Adrian Schwartz, Box 2501, Folder 2.

paycheck and a chance to be home regularly; many trucking jobs were "line hauls" between two freight terminals, allowing a trucker to return home at regular intervals. For instance, Elmer Arbaugh drove for the Smith Transfer company in the 1970s, with the 10-hour trip between terminals in his hometown of Louisville, Kentucky, and Atlanta, Georgia giving him a chance to spend half of his off-duty time at home.¹⁴⁰ Companies such as Smith Transfer that maintained a network of freight terminals tended to hire drivers to work for straight wages, rather than contract with owner-operator drivers, so a "company driver" could generally count on a regular paycheck (see **Figure 5.4**). Some of the romance of seeing new faces and places would be lost in the bargain, however, since line-haul drivers traveled the same road every day.¹⁴¹

¹⁴⁰ Wayne King, "Truckin' Man and His Radio Roll on through the Night," *NYT*, Dec. 17, 1975, 47, 90.

¹⁴¹ Lawrence J. Ouellet, *Pedal to the Metal: The Work Lives of Truckers* (Philadelphia: Temple University Press, 1994), 140-53, 193.



Figure 5.4: A "company driver" receives a steady paycheck

A "company driver" employed by a large trucking firm with a network of freight terminals generally had the opportunity to not only draw a steady paycheck, as depicted here, but also to return home at regular intervals. "Big Wheels Rolling," *Popular Science*, Feb. 1941, 121.

For those long-haul truckers whose loads kept them far from home most of the time, the separation from their families could be quite painful for both the driver and those who stayed behind. The vast majority of an average trucker's working day was spent in complete isolation, away from family and friends. Many truckers and their wives learned to manage, though. Some truckers' wives preferred an arrangement that kept their men on the road. As one woman put it: "True, it's lonesome when my man is on the

road, but ... each time he comes home it's like a second honeymoon."¹⁴² Such an attitude could be inspired by a sense that a woman should not question her husband's choice of career. One trucker's wife wrote to *Overdrive* in 1965, responding to an earlier letter from a woman who regretted not being able to have an "old fashioned" marriage: "It would seem to me that old fashioned means to allow your husband to do the type of work he enjoys most. After all, if a man is not happy in his work he can not be happy at home."¹⁴³ On the other hand, an absentee husband could encourage a less "old fashioned" view of gender roles, a theme explored by Bobbie Ann Mason in her 1982 short story "Shiloh." The story's main character, Norma Jean Moffitt, is married to a trucker named LeRoy. With LeRoy constantly on the road, Norma Jean develops an independent sense of self, taking college courses and lifting weights. When LeRoy injures his leg in an accident and begins lounging about the house collecting unemployment, Norma Jean decides she must leave him, stating: "In some ways, a woman prefers a man who wanders."¹⁴⁴

The work experience and cultural mythology surrounding truck driving provided many rural men with opportunities to cultivate a meaningful sense of manhood. Men whose culture taught them to admire both the wanderer and the stable breadwinner could use trucking to navigate their way between these contradictory ideals. Particularly in a rural context, this negotiation mattered. But manhood was not only about the degree to which one wandered; it was also about *power*—or at least a feeling of such.

"A Truck Does Not a Trucker Make"

A modern tractor-trailer is a very large machine. Though by definition its operation requires the existence of an extensive technological system of highways,

¹⁴² Mrs. L. R. K. to the Editor, *Overdrive* (Sep. 1964): 13-4.

¹⁴³ Carol Horsey to the Editor, *Overdrive* (Nov. 1965): 17.

¹⁴⁴ Bobbie Ann Mason, *Shiloh and Other Stories* (New York: Harper and Row, 1982), 16. For women who preferred to keep their marriages intact, the option of team-driving with their husbands became increasingly popular in the 1960s and '70s. See, e.g., Robert Lindsey, "Lonely Truckers Teaming up with Wives," *NYT*, Dec. 15, 1971, 37.

warehouses, manufacturers, shippers, fuel providers, and so on, the truck itself is a self-contained prime mover under the complete control of one person. Guiding a machine weighing up to 30 tons down the highway could provide a man with an incredible sense of power. Especially for someone with little education and limited economic opportunities, the feeling of control that came with piloting a big rig could make a man feel that he, as an individual, mattered. This feeling helped shape a belief that truckers were the "backbone of America"—a phrase notable not only because it appears on so many belt buckles sold in modern truckstops, but because it is a direct extension of the agrarian myth's contention that farmers were the "backbone of America." As the agrarian myth had once declared that men who worked the soil held a privileged and separate place within the moral and political universe, so truckers by the late 1970s came to define themselves as a group apart from, yet central to, society at large. As Merle Haggard declared in 1975, it took "a special breed to be a truck driving man."¹⁴⁵

Trucks were not always giant machines. In the first few decades of the twentieth century, rigs resembled horse-and-wagon delivery vehicles much more than small trains. Several key technological developments in the 1920s and 1930s paved the way for the arrival of the frighteningly large freighters of the postwar period; as noted in Chapter 1, the pneumatic tire and detached trailers were key in this regard. Meanwhile, firms such as Mack, Cummins Engine, and General Motors' Detroit Engines developed diesel engines that provided higher compression ratios, more torque, better fuel economy, and greater horsepower than gasoline engines. However, diesel engines were so much heavier than gasoline engines that they did not become standard equipment until well into the 1950s.¹⁴⁶ Making truck bodies that were large enough to accommodate a diesel

¹⁴⁵ Merle Haggard, "Movin' On," Capitol 4085.

¹⁴⁶ Cummins Engine Company Sales Manager, Press Release, "Diesel Equipped Automobile," Jan. 30, 1930, Clessie Lyle Cummins Records, Lilly Library, Indiana University, Bloomington, IN, Box 1, Folder 2; C. L. Cummins, "Recent Developments, Applications and Trends of High Speed Diesel Engines," speech before ASME Oil and Gas Power Meeting, Dallas, TX, Jun. 6, 1938, *ibid.*, Box 1, Folder 5; Stan Holtzman, *Big Rigs: The Complete History of the American Semi Truck* (Stillwater, MN: Voyageur Press, 2001), 108; T. C. Flaningham, "Factory Sales of Diesel Engines," May 2, 1958, International Harvester Company, Motor Truck Engineering and Product Bulletins/Reports, Wisconsin Historical Society, Madison, WI, Box 14, Folder 1; T. C. Flaningham, "Trucks with Diesel Engines—Over 26,000 GVW Class," Oct. 17, 1958, International Harvester Company, Motor Truck Engineering and Product Bulletins/Reports, Wisconsin Historical Society, Madison, WI, Box 14, Folder 1.

power unit required the use of aluminum rather than steel, a process begun by the Freightliner subsidiary of Consolidated Freightways in 1939 as part of an effort to build trucks capable of climbing the mountainous terrain of the West.¹⁴⁷ With all of these parts in place, the trucks that traversed America's highways after the end of World War II deserved the name "big rigs."

The increasing size of postwar trucks presented drivers with an irony. Controlling such a big, powerful machine would seem to affirm a man's strength and skill, but achieving that control required the use of increasingly elaborate technologies. A popular theme in trucking songs was the element of danger posed by high-speed highway travel, requiring "big and burly men" to master machines that were always on the verge of veering out of control on icy or mountainous roads crowded with teenagers and drunks.¹⁴⁸ Flattery of a truck driving man's imagined skill was often seen as a way to sell more records; as the jacket of the Willis Brothers' 1964 hit record "Give Me 40 Acres" stated: "It takes a lot of skill and know-how to handle a big rig and bring the load in on schedule."¹⁴⁹ Like a bucking bronco, a big rig needed an "asphalt cowboy" to tame its wildness. But as the tongue-in-cheek song "Asphalt Cowboy" noted, handling a big rig was not exactly like taming a bronco, since the trucker had an "air-conditioned seat."¹⁵⁰ After the mid-1950s, trucks and trailers were also likely to have air suspensions, rather than steel springs, which not only smoothed the ride for cargoes and drivers by absorbing road vibrations, but also reduced "vertical whip" at the back end of the trailer and minimized lateral sway as a truck moved through a tight curve.¹⁵¹ Air suspensions, however, decreased a driver's "feel" of the road, creating a "floating effect" that many

¹⁴⁷ "Freightliner: Girding for a Shake-Out by Broadening Its Truck Market," *BW*, Nov. 10, 1980, 76-8; Holtzman, *Big Rigs*, 58.

¹⁴⁸ Daniel Blaine Fulkerson, "A Tombstone Every Mile," performed by Dick Curless, Allagash Records 101; Fabor Robison, "Highway Man," performed by Curtis Leach, Fabor Records 135; Charlie Moore and Bill Napier, "Hot Rod Kids and Women Drivers," King 936; Penny Jay and Robert Buddy Wilson, "Widow Maker," performed by Jimmy Martin, Decca 74536.

¹⁴⁹ Liner Notes to The Willis Brothers, *Give Me 40 Acres (To Turn This Rig Around)*, Starday 681.

¹⁵⁰ Clark Bentley and Lawton Williams, "Asphalt Cowboy," performed by Sleepy LaBeef, Plantation 66.

¹⁵¹ "Designing Profit into Trucks," *BW*, Mar. 30, 1957, 202; Emerson W. Swan, "'Air Ride' Suspension Gives Us Better Cargo Protection," *Power Wagon* (Apr. 1957): 24.

drivers found reduced their sense of control over the machine.¹⁵² Similarly, Clessie Cummins's invention of the "jake brake" in 1954 introduced a means of gaining more control of a truck on a steep downgrade, but at the cost of deskilling a truck driving man. Cummins's jake brake, or engine retarder, worked by automatically opening a valve near the top of a diesel engine's compression stroke, releasing energy that would otherwise be used to drive the vehicle's wheels; the engine in effect became a brake.¹⁵³ The jake brake (so named because it was produced by the Jacobs Manufacturing Company) provided drivers in mountainous territory the ability to slow a truck's descent on a steep grade with less use of standard brakes. Though some drivers considered the device to be "the best invention since the wheel" since it lessened the chance for brake burnout, many also found its automatic operation disconcerting, putting yet another layer of technology between the driver and the road.¹⁵⁴

The trade-offs between ease of driving and manliness also shaped the exterior design of big rigs. Two basic tractor configurations exist: the "conventional" tractor with its engine housed in a "nose" that extends out front of the windshield, and the "cab-over-engine" design (introduced in 1908 by the Autocar company) in which the engine sits beneath the driver, making the cab of the tractor look like a cube.¹⁵⁵ A cab-over design is generally acknowledged to provide a driver with significantly more control over the machine, since the frontal placement of the windshield provides much better road vision, and the shorter overall length of the tractor allows for tighter turns. A conventional style, however, provides room for a larger, more powerful engine and, because of its longer

¹⁵² T. C. Flaningham, "Proposed Air Suspension for R-190 and Larger Trucks in City and Highway Operations," Aug. 23, 1960, International Harvester Company, Motor Truck Engineering and Product Bulletins/Reports, Wisconsin Historical Society, Madison, WI, Box 14, Folder 3, p. 16.

¹⁵³ C. L. Cummins, "For Diesel 4 Cycle," [Notes on engine brake], May 20, 1954, Clessie Lyle Cummins Records, Lilly Library, Indiana University, Bloomington, IN, Box 3, Folder 4; Clessie L. Cummins, U.S. Patent 2,876,876, "Diesel Engine Braking Control," Application Nov. 25, 1955, patented Mar. 10, 1959, Clessie Lyle Cummins Records, Lilly Library, Indiana University, Bloomington, IN, Box 3, Folder 4; Clessie L. Cummins, U.S. Patent 3,220,392, "Vehicle Engine Braking and Fuel Control System," Application Jun. 4, 1962, patented Nov. 30, 1965, Clessie Lyle Cummins Records, Lilly Library, Indiana University, Bloomington, IN, Box 3, Folder 5.

¹⁵⁴ Quote from Joe Barnett to the Editor, *Overdrive* (Jun. 1966): 28; C. Lyle Cummins, Jr. to Arthur M. Stoner (Vice president, Jacobs Manufacturing Co.), Sep. 2, 1959, Clessie Lyle Cummins Records, Lilly Library, Indiana University, Bloomington, IN, Box 3, Folder 5; W. P. Wodell (Jacobs Manufacturing Co.), "C. L. Cummins Compression Brake Marketing Survey," Feb. 8, 1960, Clessie Lyle Cummins Records, Lilly Library, Indiana University, Bloomington, IN, Box 3, Folder 6;

¹⁵⁵ Holtzman, *Big Rigs*, 12.

wheelbase, gives the driver a smoother ride.¹⁵⁶ Furthermore, a conventional simply looks more manly. The importance of the symbolic power of a manly-looking rig was well-known by drivers and employers alike; it has been quite common for drivers to take a substantial pay cut in order to be allowed to drive a conventional rather than a cab-over.¹⁵⁷ This was especially true if that long-nosed tractor were a Peterbilt or Kenworth—known as the equivalents of the "Mercedes" and "Cadillac" of big rigs, respectively. Both companies have long been famous for producing custom-built, sharp-looking tractors that appeal primarily to truckers looking for a rig that publicly announces its owner or driver as a manly man. As one owner-operator put it, "Owning that big Pete [Peterbilt], with the chrome stacks, the padded dashboard, and stereo radio, and shifting thirty-two gears and chromed wheels, that's heaven."¹⁵⁸ The aesthetics of a custom-built truck have often taken on an almost erotic tone, with magazines such as *Overdrive* dedicating significant space to centerfold "Tractor of the Month" photographs of gleaming "Petes" and "KWs."¹⁵⁹

The experience of being behind the wheel of an enormous machine empowered truckers as a social group riding high above mere "civilians" in their "four-wheelers." The act of climbing up into a semi's cab has often been referred to by drivers as a thrill like no other: "The minute you climb into that truck, the adrenaline starts pumping. If you want to have a thrill, there's no comparison."¹⁶⁰ Stepping down from such a high perch could make a driver feel so low to the ground that he became "downright sick."¹⁶¹ Unlike the operation of most industrial machinery, driving a big rig could produce a sense of empowerment as one's body merged with the machine, creating a "high" for the

¹⁵⁶ T. C. Flaningham, "Cab-Over-Engine Trucks," Oct. 21, 1958, International Harvester Company, Motor Truck Engineering and Product Bulletins/Reports, Wisconsin Historical Society, Madison, WI, Box 14, Folder 1; James Harold Thomas, *The Long Haul: Truckers, Truck Stops, and Trucking* (Memphis: Memphis State University Press, 1979), 124-5.

¹⁵⁷ Schwartz, *J. B. Hunt*, 76; Ouellet, *Pedal to the Medal*, 141, 192.

¹⁵⁸ "Peterbilt Is Betterbilt," *Overdrive* (Sep. 1963): 24-6; "Y'all Come to Peterbilt Country!," *Overdrive* (Feb. 1972): 35; Holtzman, *Big Rigs*, 94; Terkel, *Working*, 214.

¹⁵⁹ See, e.g., Stan Holtzman, "Tractor of the Month," *Overdrive* (Sep. 1964): 26.

¹⁶⁰ Terkel, *Working*, 209. See also Jane Stern, *Trucker: A Portrait of the Last American Cowboy* (New York: McGraw-Hill, 1975), 2.

¹⁶¹ J. Anthony Lukas, "A Trucker's Grind: 'Me, the Rig and the Road'," *NYT*, Apr. 17, 1970, 32.

driver.¹⁶² Rather than be dwarfed by the size of his rig, a driver could come to feel so intimately connected to the equipment that, as one trucker put it, "a ground gear is a feeling of pain as real as a cut or scratch would be to the operator."¹⁶³ Becoming one with the machine in this context made a man feel larger than himself, in direct contrast to narratives of being a mere cog swallowed up and unmanned by the scale of industrial machinery, as depicted most famously by Charlie Chaplin in the 1936 film *Modern Times*.¹⁶⁴

Simply taking the wheel was not enough to make a driver into a fully empowered truck driving man. In the words of Otto Riemer, "a truck does not a trucker make," by which he meant that a true trucker was one who could harness the power of his machine to drive safely and courteously, maneuver easily in tight positions, and maintain a consistent speed in all types of terrain.¹⁶⁵ Opportunities to make such skills apparent to a wider audience came in the form of "Truck Roadeos," state and national contests sponsored by the American Trucking Associations beginning in 1937 that tested a driver's knowledge of safety rules and his ability to drive skillfully through an obstacle course consisting of barrels, tight alleys, and parallel parking stations. ¹⁶⁶ Truckers understood possession of such skills to be the essential distinction between themselves and "civilians" whose small, maneuverable four-wheeled automobiles did not require the ability to "anticipate situations a block ahead of you ... because you can't stop like a car's gonna stop."¹⁶⁷ Echoing an idea central to trucking work culture, country songs about the "King of the Open Road" warned the "dad-blamed tourists" that they had best respect the power of the professional driver.¹⁶⁸ One of the biggest hits of the genre, "Diesel on My Tail" by Jim and Jesse McReynolds, poked fun at a driver of a "little foreign car" followed

¹⁶² Joseph A. Blake, "Occupational Thrill, Mystique and the Truckdriver," *Urban Life and Culture* 3, no. 2 (1974): 205-20.

¹⁶³ A Trucker in Vietnam to the Editor, *Overdrive* (May 1967): 18.

¹⁶⁴ *Modern Times*, dir. Charles Chaplin, 110 min., Charles Chaplin Productions, 1936, videocassette.

¹⁶⁵ Riemer, *Hammer Down*, 10.

¹⁶⁶ "Truck Rodeo," *Motor Carrier* (Aug. 1940): 7; Broehl, *Trucks, Trouble, and Triumph*, 182-3.

¹⁶⁷ Terkel, *Working*, 209.

¹⁶⁸ Earl Grace and Tommy Hill, "King of the Open Road," performed by Red Sovine, Starday SLP 341; Robert Valentine and Bobby Braddock, "Gear Bustin' Sort of a Feller," performed by Bobby Braddock, MGM K13658.

by a giant diesel truck, who asked his rearview mirror with a "mighty pale" reflection, "Can this compact take the impact?"¹⁶⁹ Only a professional driver could control the raw power contained under the hood of a big diesel.

The coded jargon of Citizen's Band radio helped contribute to the truck driver's sense of himself as one of a "special breed." Although introduced in 1947 by the Citizens Radio Corporation, the "CB" did not become standard equipment in trucks until the 1970s, after the invention of solid-state electronics made the mass production of powerful, lightweight transmitter/receivers possible.¹⁷⁰ For many truckers, a CB was simply a useful work tool, replacing ambiguous hand and headlight signals previously used to communicate with other truckers about the location of police radar traps.¹⁷¹ A trucker could, for instance, radio to another passing in the opposite direction that his "front door" was "clear" (meaning that no police lay in wait ahead), so he could feel free to "put the hammer down" (accelerate). But CBs also became a way for truckers to create a sense of solidarity as individuals distinct from the general populace, as they developed a complex argot composed of obscure metaphors incomprehensible to outsiders.¹⁷² Marked by the use of a vaguely "Texarhoma" accent and an inventive sense of humor, CB lingo transformed the mundane events, people, and places of a trucker's world into a lively linguistic game. Pulling an empty trailer became "hauling post holes," an unmarked police car was a "Smokey in a plain wrapper," a low overpass was a "barbershop," a Volkswagen Beetle was a "pregnant rollerskate," a truckstop with tasteless food was a "choke and puke," and so on.¹⁷³

¹⁶⁹ Jim Fagan, "Diesel on My Tail," performed by Jim and Jesse McReynolds and the Virginia Boys, Epic 10138; Dixie Deen, "'Diesel on My Tail'—Jim and Jesse," *Music City News* (May 1967): 6, 8, 10.

¹⁷⁰ CBs first gained a foothold in the mass market after 1959, when the Federal Communications Commission (FCC) allotted a portion of the radio frequency spectrum specifically for two-way, non-commercial communication. The widespread popularity of the CB did not come until the mid-1970s, however. In 1975, the Federal Communications Commission received 73,000 applications for licenses to operate Citizens Band radios; only one year later, the FCC estimated that 13 to 15 million units were in use. Michael Harwood, "America with Its Ears On," *New York Times Magazine*, Apr. 25, 1976, 28. See also Thomas, *Long Haul*, 138-47.

¹⁷¹ Runcie, "Social Group Formation," 112.

¹⁷² Richard Ramsey, "The People versus Smokey Bear," *Journal of Popular Culture* 13: 2 (1979): 338-44.

¹⁷³ Lanie Dills, *The "Official" CB Slang Language Dictionary* (Nashville: Dills, 1976).

Truckers' sense of separateness was further encouraged by the rise of the truckstop as a space of male working-class culture. The modern truckstop appeared primarily after the construction of the nation's interstate highways in the late 1950s and 1960s, as small mom-and-pop roadside cafes were increasingly replaced by full-service multiplexes, operated as chains by a few large petroleum companies.¹⁷⁴ For instance, the Union Oil Company (Union 76) owned 300 of the 700 such truckstops built in the ten years leading up to 1971.¹⁷⁵ Built to lure truckers who spent hundreds of dollars on fuel at each stop, the new truckstops offered some combination of food, coffee, truck washing and repair, truck scales, restrooms and showers, lodging, and above all, a place to meet other truckers.¹⁷⁶ To help truckers avoid interaction with the despised "civilians," most truckstops created separate dining rooms and rest areas for "professional drivers only." As the owner of a stop outside Tampa, Florida, explained in 1965: "We cater strictly to Truckers and not to tourists."¹⁷⁷ The "professional drivers only" section provided a space for truckers to fuel up on "100-mile coffee" while swapping war stories about "Smokeys," road hazards, and "the different drunks that try to get under your wheels."¹⁷⁸ Truckstops rather pointedly defied middle-class notions of dress, behavior, and taste; men wore overalls and work boots or cowboy hats and big belt buckles, while eating meals where quantity took precedence over quality.¹⁷⁹ Truckstops created a space where suburban middle-class individuals were meant to feel uncomfortable, a theme dramatized in Steven Spielberg's 1971 made-for-TV movie *Duel*. The movie depicts a southern

¹⁷⁴ William A. Clark, "Truck Valets," *Wall Street Journal* (hereafter *WSJ*), Nov. 28, 1951, 1, 11; Thomas J. Bray, "New Truck Stops Lure Drivers with Motels, Pools, Free Services," *WSJ*, Oct. 26, 1964, 1, 8; John A. Jakle and Keith A. Sculle, *The Gas Station in America* (Baltimore: Johns Hopkins University Press, 1994), 72, 75.

¹⁷⁵ Robert Lindsey, "Truck Stops Transformed into Million-Dollar Complexes," *NYT*, Nov. 21, 1971, S18.

¹⁷⁶ Anne Constable, "In Georgia: Footnotes from a Trucker's Heaven," *Time*, Feb. 19, 1979, 6-7.

¹⁷⁷ Kirk Slack to the Editor, *Overdrive* (Jul. 1965): 10-1.

¹⁷⁸ Terkel, *Working*, 208.

¹⁷⁹ Madsen, *Open Road*, 167. Despite a widespread belief that tourists could find the best road food "where the truckers eat," the truckers' use of the phrase "choke and puke" for the average roadside diner had a ring of truth. The issue was not that truckers did not prefer "good" food, but that their definition of "good" was dictated by the speed of service, the size of portions, the amount of meat, and the overall ability of a meal to provide a sensation of fullness for a reasonable price. See, for instance, R. M. (Johnnie) Johnson to the Editor, *Overdrive* (Dec. 1961): 4; "Overdrive Truck Stop Recommendations," *Overdrive* (Oct. 1961): 13; "Thumbs Down on the Following Truck Stops," *Overdrive* (Apr. 1963): 16. On postwar middle-class notions of masculine meals, see Jesse Berret, "Feeding the Organization Man: Diet and Masculinity in Postwar America," *Journal of Social History* 30 (Summer 1997): 805-26.

Californian businessman, dressed in shirt and tie, who drives his compact Plymouth Valiant into the rural landscape where truckers own the road—a fact that is driven home after he cuts off a trucker in a gas tanker, unwittingly starting a deadly game of cat-and-mouse driving in which the trucker repeatedly tries to run the commuter off the road. A tense moment comes when the exhausted commuter pulls into a truckstop, hoping to confront his unseen antagonist. Stepping into the diner, the milquetoast is clearly out of his element, surrounded by sunburned men in cowboy boots and Stetson hats and big-haired waitresses who emanate a palpable dislike for the outsider.¹⁸⁰ The truckstop was a place for truckers to bond, however briefly, as working-class men; all others were unwelcome.

There were limits to the working-class solidarity of trucking culture. Particularly for black truckers, the hope that one's identity as a truck driving man could take precedence over one's racial identity too often proved unobtainable. A black trucker named John J. Harris, for instance, wrote a letter to *Overdrive* in 1963 to complain of separate but unequal facilities at truck stops in certain southern states: "When I start on duty at my job I automatically lose my [racial] identity and become a 'trucker' and I sincerely feel and will demand the same treatment and respect as any other 'trucker.'" But, as Harris noted, that respect was clearly lacking in segregated washrooms that did not provide "the same decent and modern facilities as [those available to] the white driver." Harris further recognized that the "professional drivers only" section of the restaurant often implied "white drivers only," as "if they don't want us there."¹⁸¹ As in the case of women, black truckers often found it difficult to be accepted as a "true" trucker in an occupation dominated by white men. And like women, black truckers suffered from informal and formal arrangements in Teamster locals that defined long-haul driving as a white man's job, reserving for black men lower-paying jobs in warehouses, local delivery driving, and "spotting" (guiding trucks to delivery docks).¹⁸²

¹⁸⁰ *Duel*, dir. Steven Spielberg, 90 min., Universal, 1971, videocassette.

¹⁸¹ John J. Harris to the Editor, *Overdrive* (Nov. 1963): 11-2.

¹⁸² Richard D. Leone, *The Negro in the Trucking Industry* (Philadelphia: Wharton School, University of Pennsylvania, 1970); Thaddeus Russell, *Out of the Jungle: Jimmy Hoffa and the Remaking of the American Working Class* (New York: Knopf, 2001), 121-2.

The act of driving a truck could be an empowering experience, providing a sense of controlling an enormous piece of machinery that marked a man as part of a distinctive social group. Because the pride associated with this sense of power was so important to truckers, they created carefully guarded boundaries to their group identity, excluding "civilians," unskilled drivers, and black truckers from full membership. Like the old agrarian myth that defined a farmer as a hard-working (white) man whose labor made the lifestyles of lesser men possible, trucking culture imagined a truck driving man as both central to American society yet essentially separate. In the 1970s, this sense of separateness would take on a new intensity as the truck driving man came to understand himself as the "last American cowboy."

"Truckers Ain't Organization People!"

Anti-establishment sentiments, which ran strong in American trucking culture from the earliest days of long-haul trucking in the 1930s, emerged in the 1970s as a full-fledged repudiation of all large-scale institutions. In particular, many truckers came to deeply resent the very existence of large trucking firms, the International Brotherhood of Teamsters, and layers of government regulations which they saw as constraining their sense of independent manhood. Truckers came to imagine themselves as outlaw figures resisting all efforts of liberal society to bring stability and social cohesion to American life—a process encouraged by a slew of popular culture representations of truckers as cowboys, bandits, and renegades following in the wake of the "independent trucker" shutdowns of the 1970s. The uprising, in both its political and mythological forms, drew from a wellspring of anti-establishment resentment that had long simmered in the rural social landscape, a resentment that had risen, abated, yet lived on after the Populist agrarian movement of the 1890s.¹⁸³ In tune with a wider cultural moment in the 1970s

¹⁸³ On the Populists, see Lawrence Goodwyn, *The Populist Moment: A Short History of the Agrarian Revolt in America* (Oxford: Oxford University Press, 1978); John D. Hicks, *The Populist Revolt: A History of the Farmers' Alliance and the People's Party* (Lincoln: University of Nebraska Press, 1961 [1931]); Robert C. McMath, Jr., *American Populism: A Social History, 1877-1898* (New York: Hill and Wang, 1993). Elizabeth Sanders has persuasively argued in *Roots of Reform* (op. cit.) that the Populist movement, broadly

when populism became a means of protesting liberal social change rather than encouraging it, the "bandit" trucker who defied authority figures became a national (anti-)hero.¹⁸⁴ But like the original Populist movement, the independent trucker shutdowns of the 1970s led to an unintended consequence, contributing to a push for the economic deregulation of the trucking industry, which brought a new degree of chaos to the rural industrial landscape.

The corporate consolidation of large sectors of the trucking industry in the 1960s contributed to the driver resentment that emerged in the 1970s. A wave of mergers occurred in the general freight trucking business in the mid-1960s, reshaping what *Business Week* had declared in 1952 to be "one of the most loosely organized businesses in the U.S." with "no central authority, no single data-collecting or coordinating agency," and in which "more than half of the trucks are owned by individuals who have just one truck."¹⁸⁵ Firms seeking to tame this chaotic situation were encouraged by the provisions of the 1935 Motor Carrier Act, administered by the Interstate Commerce Commission (ICC). The ICC required any trucking firm engaged in interstate commerce to receive a license granting authority to operate in particular geographical areas, licenses which the ICC did not readily give out, since its goal was to limit competition in the industry (see Chapter 1). This effectively prevented most trucking firms, even the very largest, from creating nationwide freight networks. A company wishing to deliver goods from one coast to the other generally had to consign shipments to another trucking firm to get the load through, preventing any opportunity to achieve economies of scale on a national level. After the construction of the interstate highway system began in 1956, making high-speed cross-country hauling both feasible and desirable, a number of companies began buying up their competitors to attain authority to operate throughout the nation.¹⁸⁶

construed, did not in fact fail politically, since agrarian reformers helped push the federal government towards a Progressive model of using the power of the national state to regulate the industrial economy. But as even Sanders recognizes, this was not necessarily the intent of the Populist movement.

¹⁸⁴ On the shifting cultural politics of populism in the 1970s, see Michael Kazin, *The Populist Persuasion: An American History* (New York: Basic Books, 1995), esp. 221-66.

¹⁸⁵ "Where Do Trucks Go From Here?" *BW*, Nov. 22, 1952, 70.

¹⁸⁶ "Not Only the Trucks Are Swelling to King Size," *BW*, Jun. 22, 1957, 168-76.

One leading company in this regard was Consolidated Freightways of Menlo Park, California. In the mid-1950s Consolidated began reaching out from its established position in the western half of the country to create a nationwide network. From 1957 to 1960, the company purchased 20 smaller truck lines and applied to the ICC for permission to acquire 13 more. Once the acquisitions were in place, Consolidated had a nationwide hub-and-spoke network consisting of more closely spaced freight terminals, allowing it to reduce the mileage traveled between each terminal from 750 miles to an average of 400 miles, providing greater operating efficiency and making it the largest trucking firm in the nation.¹⁸⁷ In the mid-1960s, this trend accelerated. Between 1964 and 1965 alone, the ICC approved 200 mergers and acquisitions, contributing to a decline in the number of for-hire trucking firms from 30,000 in 1935 to 15,000 in 1965.¹⁸⁸ Companies such as Yellow Transit aggressively acquired competitors to gain their operating authorities and terminals; by the mid-1970s, the firm had bought itself a position as the third-largest trucking firm.¹⁸⁹ It should be noted, however, that even with these mergers the trucking industry remained much less concentrated than other industries such as the railroads or airlines; as late as 1977, the three largest trucking firms (Roadway Express, Consolidated, and Yellow) controlled only 13 percent of the market of Class I (annual revenues over \$3 million) for-hire, common-carrier interstate freight. Although this sector of the trucking industry was the most profitable, the vast majority of trucks continued to be operated by smaller firms, including Class II (\$500,000 to \$3 million in revenues) and Class III (revenues under \$500,000) regulated for-hire carriers, non-regulated haulers of exempt agricultural commodities, and non-trucking firms operating their own private fleets.¹⁹⁰ Nonetheless, the decade of the 1960s saw a significant introduction of corporate capital to an industry that

¹⁸⁷ "Merger Trend Picks up Speed in Trucking as Rivalries Get Hot," *BW*, Jan. 2, 1960, 38-41.

¹⁸⁸ "Trucking Rolls into an Age of Giants," *BW*, Jun. 12, 1965, 175, Lanotte Papers, Reel 1.

¹⁸⁹ "Yellow Transit, Trucker in a Hurry," *BW*, Aug. 28, 1965, 61-6; "Routes (And How to Acquire Them)," *Forbes*, May 15, 1977, 68-70.

¹⁹⁰ American Trucking Associations, *American Trucking Trends* (Washington, DC: American Trucking Associations, 1979).

investment bankers had previously shunned as too unstable to warrant long-term investment.¹⁹¹

For many truck drivers, this shift in the trucking industry marked a betrayal of the spirit of trucking that had drawn them into the work in the first place. The most vocal opponent of the increasingly corporate orientation of trucking was an ex-driver named Mike Parkhurst. Parkhurst started trucking in 1951, at the age of 17, as an owner-operator. A decade later, he sold his truck and used the proceeds to establish *Overdrive* magazine to espouse his "populist philosophy" and speak in "The Voice of the American Trucker," as the magazine's masthead proclaimed.¹⁹² In the first few issues of *Overdrive*, which were essentially pamphlets sold for a dime at any truckstop willing to provide the rack space, Parkhurst railed against unclean truckstops and user-unfriendly truck designs, while advocating legalized prostitution and occasional use of amphetamines. By February of 1962, however, Parkhurst took a more political direction, having decided that he was a "radical conservative."¹⁹³ Parkhurst proclaimed the mission of *Overdrive* in a 1962 manifesto for the independent truckers of the world: "Today, the small businessman is being swallowed up by the big businessman.... Yet, there remains a combination small businessman and adventurer [who] is commonly referred to as a trucker. While this may seem to be a romantic description of a tired ex-farmer from Iowa, that is just what many thousands of truckers are." Parkhurst vowed to fight for the independent trucker who represented the only hope for a society overrun by corporate control; to that end, he would publish brutally honest stories, whether about venereal disease or corporate greed, no matter how many advertisers were offended.¹⁹⁴ As he later told a reporter for *Time*, he wanted "to wake the truckers up to the fact that they're slaves

¹⁹¹ "Merger Trend Picks Up," 38.

¹⁹² "Truckin' with Overdrive," *Time*, Sep. 1, 1975, 56.

¹⁹³ Harry Maurer, "Organizing the 'Gypsies'," *Nation*, Jan. 11, 1975, 12.

¹⁹⁴ "Who We Are, Why We Are, Where We Are," *Overdrive* (Feb. 1962): 25. The magazine succeeded in consistently offending advertisers; the White truck manufacturing company, for instance, pulled its account after a story criticized one of its machines. Nonetheless, the magazine did well financially, especially after it raised its price per issue to \$1, and then to \$2.50 ("The Price of the Truth"), circulating to approximately 56,000 readers in the mid-1970s. See Harry Crews, "The Trucker Militant," *Esquire*, Aug. 1977, 146; "Truckin' with Overdrive," 56.

to a monopoly."¹⁹⁵ But if Parkhurst directed his early populist anger towards big corporations, most of his venom—and that of many truckers in the 1970s—was reserved for big labor and big government.

Many truckers came to believe that the International Brotherhood of Teamsters was an impediment to their independence in the 1970s. As detailed in Chapter 1, the International Brotherhood of Teamsters reached its greatest strength in the mid-1960s. For three decades the Teamsters had honed a strategy that paradoxically combined the use of brute force and pragmatic "business unionism" to organize large and medium-sized trucking firms. By 1964, the Teamsters gained the acceptance of a National Master Freight Agreement, binding nearly every large trucking firm in the country to a standard labor contract that covered approximately 450,000 truck drivers.¹⁹⁶ The Teamsters had become the nation's largest single union, exercising significant influence in the economic relations of the trucking industry as well as in local, state, and federal politics.¹⁹⁷

That power, however, had largely been achieved by union leaders dedicated more to the enlargement of the organization's membership and jurisdictional reach than to empowering rank-and-file Teamster members. The Teamsters did, of course, achieve significant improvements in the wages, benefits, and working conditions of its members. For an industry that had begun in the 1930s with essentially no labor standards, the truck-driving members of the postwar Teamsters had made remarkable gains of job stability, seniority rights, strong wages, guaranteed pensions, and paid vacations, among other benefits. As Teamster member Harvey Holliday declared in 1978, his membership in Local 641 had assured him "plenty of work and in terms of direct pay, I'm doing well."¹⁹⁸ Especially in comparison to general trends in industrial wage gains, Teamsters benefited handsomely from union membership. The differential between the average Teamster's annual earnings and his counterparts in general manufacturing industries

¹⁹⁵ "Truckin' with Overdrive," 56.

¹⁹⁶ Harold M. Levinson, et al., *Collective Bargaining and Technological Change in American Transportation* (Evanston, IL: Transportation Center at Northwestern University, 1971), 19-20.

¹⁹⁷ Russell, *Out of the Jungle*; Ralph C. James and Estelle Dinerstein James, *Hoffa and the Teamsters: A Study of Union Power* (Princeton: Van Nostrand, 1965).

¹⁹⁸ "Life of a Trucker Has Changed over the Decades," *NYT*, Dec. 14, 1978, A27.

increased from 19 percent in 1938 to 72 percent in 1972.¹⁹⁹ These achievements had come primarily under the leadership of Dave Beck and his protégé James R. Hoffa, both of whom established the political and economic strength of the union by centralizing power in their own hands and creating an exceptionally undemocratic internal bureaucracy. Hoffa declared the reason for this centralization in 1957: "The future of labor-management relations is big labor and big business, for there is no room for the small business or the small union."²⁰⁰ Remarkably, this attitude did not necessarily alienate rank-and-file members from their union's leadership, even when Hoffa used his power to make shady business deals with mobsters, inviting close federal scrutiny and eventually a prison sentence for defrauding the union's pension funds. As one driver explained his unshakeable commitment to Jimmy Hoffa, even after a series of Senate racketeering investigations in 1958 had brought negative publicity to his union: "Every year that old raise is there, and it has been ever since Hoffa took over."²⁰¹ Many rank-and-filers in the 1960s remained deeply loyal to the Teamsters union that, although it had utterly silenced individual members' voices in labor negotiations, had nonetheless brought them undeniable economic benefits.²⁰²

The signing of the National Master Freight Agreement (NMFA) in 1964, however, marked not only the extraordinary rise of Teamster power but also the beginning of a steady decline in the number of truck drivers belonging to the union. Four years after the signing of the first NMFA, approximately 500,000 truck drivers belonged to the Teamsters (out of 1.6 million total members). By 1976, the number of unionized long-haul truckers had decreased to 280,000, and by 1985 that number had dropped to 160,000.²⁰³ These decreases came at a time when overall employment in the trucking industry *increased*, so that between 1966 and 1977, the volume of freight carried by

¹⁹⁹ Council on Wage and Price Stability, *The Value of Motor Carrier Operating Authorities* (Washington, DC: Council on Wage and Price Stability, 1977), 31.

²⁰⁰ Witwer, *Corruption and Reform*, 139.

²⁰¹ A. H. Raskin, "Why They Cheer for Hoffa," *New York Times Magazine*, Nov. 9, 1958, 78.

²⁰² Russell, *Out of the Jungle*, 213-26.

²⁰³ Charles R. Perry, *Deregulation and the Decline of the Unionized Trucking Industry* (Philadelphia: Wharton School, University of Pennsylvania, 1986), 35, 110.

unionized truckers declined by approximately 25 percent.²⁰⁴ The reasons for this decline were multiple, but were primarily rooted in the growth of smaller non-union trucking firms and self-employed owner-operator truckers. The growth of such firms was partly due, as we have seen in earlier chapters, to the expansion of trucking companies hauling specialized commodities such as milk, beef, and frozen foods (along with non-agricultural commodities such as steel, furniture, and petrochemicals). Shippers of such products valued the flexibility of service that small trucking firms could provide. Unlike the large common carriers, such as Consolidated Freightways, smaller firms did not make deep investments in hub-and-spoke freight terminals to gain overall systemic operating efficiency by consolidating, breaking up, and reconsolidating less-than-truckload (LTL) shipments. Instead the smaller companies focused on hauling full truckload (TL) shipments that only required them to drive up to the loading site and haul the load directly to its destination. The hub-and-spoke system of the LTL shippers provided systemic efficiency by creating a network of short, regular routes, but also required big outlays of capital, salaried systems engineers, and reams of paperwork to coordinate the logistics. Smaller TL companies needed only their trucks and trailers and a willingness to show up wherever and whenever their services were needed.

Many of these firms were located in rural areas, where the small-business, non-unionized pattern set by agricultural trucking firms had already been well established. In Kansas in 1962, for instance, 95 percent of the state's trucking companies had fewer than five employees each.²⁰⁵ Such small, rural firms had proven consistently difficult for the Teamsters to organize, as exemplified by a failed effort in the summer of 1960 by a Teamster recruiter to organize Hanefeld Trucking, a small cattle-hauling firm in central Wisconsin. Hanefeld employed 12 drivers, making it the largest (yes, the largest) cattle-hauling firm in the state at the time. Though the drivers were assured that "only through the Teamsters Union can you make this job a decent one," the Hanefeld brothers who owned the firm threatened to cease operations if the workers organized. Only six of the

²⁰⁴ Harold M. Levinson, "Trucking," in *Collective Bargaining: Contemporary American Experience*, ed. Gerald G. Somers (Madison, WI: Industrial Relations Research Association, 1980), 135.

²⁰⁵ "Trucking Industry Second in Kansas," *Wichita Eagle*, Jun. 10, 1962.

drivers voted to accept Teamster representation, with the other six drivers and four additional employees opting out.²⁰⁶ In similarly hostile situations in earlier times—as in a successful drive to organize small companies in Nebraska in the early 1950s—the Teamsters had been able to resort to secondary boycotts (i.e., cutting off a firm's supplies of fuel, tires, and truck parts delivered by drivers at organized firms) to compel recalcitrant companies to sign collective bargaining agreements.²⁰⁷ But when Congress passed the Landrum-Griffin Act in 1959, the secondary boycott used so effectively over the years by the Teamsters became illegal, forcing the union to rely solely on the much less effective methods of picketing and firm-by-firm balloting.²⁰⁸

Non-union trucking firms consequently sprouted rapidly in the 1960s and 1970s, particularly in rural areas where anti-union sentiments had always run strong, making worker-initiated organizing campaigns unlikely. Many of these firms started out small, such as the trucking company established by cattle farmer Lamar Beauchamp in Winter Haven, Florida, in the early 1960s to haul carcasses from midwestern beef packing plants to supermarkets in the Southeast. What started as a fleet of five reefer trucks expanded dramatically in 1965, however, when Beauchamp decided to buy out the Refrigerated Transport Company. Although Refrigerated Transport was one of the nation's largest trucking firms at the time, it was on the verge of bankruptcy, and sold out to Lamar Beauchamp and his son Richard for only \$600,000. By employing solely non-union owner-operator drivers, the Beauchamps were able to undercut the freight rates of unionized firms hauling perishables. By 1980 Refrigerated Transport had become the

²⁰⁶ "Hanefeld Trucking (Brothers)," notes by anonymous Teamsters Local 695 recruiter, n.d. (May 1960?); "Hanefeld Election ... Eligibility List as Submitted by the Company," n.d. (Jun. 1960); A. E. Mueller (Teamsters Local 695) to All Hanefeld Trucking Employees, Jun. 29, 1960; National Labor Relations Board, Certification of Results of Election, Case No. 13-RC-7223, Jul. 18, 1960, all in IBT 695 Records, Box 37, Folder 1.

²⁰⁷ "Minutes of Meeting Held at Lincoln Hotel," Jan. 11, 1951, International Brotherhood of Teamsters Records, Wisconsin Historical Society, Madison, WI, Reel 63.

²⁰⁸ The Landrum-Griffin Act emerged out of the Senate anti-racketeering hearings of 1957 and 1958 headed by Senator John McClellan, with Robert F. Kennedy serving as lead counsel and publicist of the committee's investigation into corruption charges in various unions (but particularly the Teamsters). The Landrum-Griffin Act did not outlaw the secondary boycott, which had already been made illegal by the Taft-Hartley Act of 1947; it simply closed up a loophole in the Taft-Hartley legislation that had allowed the Teamsters to insert "hot cargo" clauses in its contracts, meaning that organized employees could refuse to handle "hot" loads on their way to or from a non-union firm—thus creating a de facto if not de jure secondary boycott. See Russell, *Out of the Jungle*, 185-211.

nation's largest reefer trucking firm.²⁰⁹ Such firms often practiced a form of welfare capitalism reminiscent of the 1920s to keep truckers loyal to the "family atmosphere" of a company. This was the case at Merrill Transport of Maine, which maintained its status as the largest non-union trucking firm in that state in the 1970s by offering profit-sharing plans, promotion to managerial status from within the ranks of drivers, and a "generous Christmas program."²¹⁰ The single largest non-union trucking firm, Overnite Transportation of Richmond, Virginia, similarly relied on a welfare capitalist strategy in the 1970s to fend off the Teamsters, though the company supplemented this strategy with less benign tactics. Begun as a one-truck affair in the 1930s by Harwood Cochrane (a former dairy farmer), Overnite expanded rapidly in the 1960s and 1970s by buying up struggling unionized companies, laying off all the drivers, and filling the jobs with "extremely loyal people."²¹¹ Under Cochrane's direction, Overnite earned a reputation as a virulently anti-union company, even pouring salt in the wound by successfully suing the Teamsters in 1961 for \$863,193 in damages caused by a secondary boycott.²¹² As such companies, along with a host of much smaller concerns, flourished in the 1970s, the "independent" owner-operator became a much more common figure in the trucking industry. In 1979, industry analyst Daryl Wyckoff estimated that approximately 100,000 of the nation's 500,000 long-haul truckers were owner-operators, and most (upwards of 80 percent) did not belong to any union.²¹³ A 1977 article in *U.S. News* argued that the

²⁰⁹ Jean A. Briggs, "Put that Hammer Down, Good Buddy!," *Forbes*, Sep. 1, 1980, 118-20.

²¹⁰ Merrill, *Forty-Six Years a Truckman*, 23-4. On corporate welfare as a tool for preventing unionization, see Sanford M. Jacoby, *Modern Manors: Welfare Capitalism since the New Deal* (Princeton: Princeton University Press, 1997); David Brody, *Workers in Industrial America: Essays on the Twentieth Century Struggle*, 2nd Edition (New York: Oxford University Press, 1993), 48-81; Lizabeth Cohen, *Making a New Deal: Industrial Workers in Chicago, 1919-1939* (Cambridge: Cambridge University Press, 1990), 159-83; Ellis W. Hawley, *The Great War and the Search for a Modern Order: A History of the American People and Their Institutions* (New York: St. Martin's Press, 1979), 68-71;

²¹¹ "From One Secondhand Truck to a Giant Truckline," *Nation's Business*, Jul. 1978, 40-6, quote on 44.

²¹² "Teamsters Lose Case," *NYT*, Nov. 22, 1961, 66. Overnite was officially organized by the Teamsters in 1995, although to date the firm has successfully ignored every demand made by the union, a situation explored in the documentary film *American Standoff*, dir. Kristi Jacobsen, 95 min., HBO Films, 2002.

²¹³ Wyckoff, *Truck Drivers*, 4. The U.S. General Accounting Office estimated in 1980 that only about 20,000 owner-operators (approximately 20%) belonged to the Teamsters. Perry, *Deregulation and the Decline of the Unionized Trucking Industry*, 62. This was also the percentage given by a 1977 ICC survey of owner-operators; Interstate Commerce Commission, *Independent Trucker*, 17. However, as Wyckoff and Maister pointed out in their 1975 survey of owner-operators, government agencies tended to undercount owner-operators, since they often ignored many haulers of exempt agricultural commodities; this would make the percentage of unionized owner-operators significantly less than 20%. See Wyckoff and Maister, *Owner-Operator*, 8-12.

Teamsters union was itself to blame for the trend, having been so successful at gaining wage increases over the years that "its members are being priced out of their jobs."²¹⁴

But for many truckers who chose to join non-union firms, the issue at hand was not a matter of pure economics, but a more generalized sense that the Teamsters leadership had lost touch with the working man. The centralized bureaucracy that had developed a powerful means of attaining nationwide bargaining—a remarkable feat in an inherently decentralized industry—appeared to many truckers in the 1970s to be allied with all the big institutions constraining the independence of the trucker. As an owner-operator steel hauler (and former Teamster), told Studs Terkel in 1974, "Outside of the dues money [the Teamsters] take out of your check, they did absolutely nothing. They did less than nothing.... They're establishment. They're interlocked with the steel mills and the trucking companies."²¹⁵ This statement from a steel hauler represented a broader sentiment among owner-operators in that industry, as had become clear during a set of violent wildcat strikes in 1967 and 1970 in Indiana, Ohio, and Pennsylvania. A group of owner-operators belonging to the Teamsters organized a dissident group called the Fraternal Association of Steel Haulers (FASH), determined to gain recognition within the union for their unique needs "as the semi-independent owner-operators of their own expensive equipment." As one member of FASH stated the aim of the wildcat strikes, "The [T]eamsters say they represent you, but they don't. We're just dues payers."²¹⁶ The formation of FASH was only part of a much broader frustration with the Teamsters among many truckers in the 1970s. As an anonymous trucker told writer Robert Krueger in 1975, "The Teamsters don't give a damn about the rank and file now."²¹⁷ In a work

²¹⁴ "A Big Union that's Haunted by Its Own Success," *U.S. News and World Report*, Aug. 8, 1977, 75.

²¹⁵ Terkel, *Working*, 211-12.

²¹⁶ Christopher Lydon, "Steel Truckers Will Press Fight," *NYT*, May 25, 1970, 43. See also John Kifner, "Thousands of Workers Are Laid off as Result of Wildcat Teamster Strike," *NYT*, May 3, 1970, 80; Samuel R. Friedman, *Teamster Rank and File: Power, Bureaucracy, and Rebellion at Work and in a Union* (New York: Columbia University Press, 1982). FASH was not the only group to form within the Teamsters to push for a decentralization of power; a national group called the Teamsters United Rank and File (TURF) pushed for reforms beginning in 1970. Although it was dissolved several years later, its place was taken by the Professional Road Drivers Council (PROD) and Teamsters for a Democratic Union (TDU), both of which promoted insurgent candidates for leadership of the national union, though with little success. See *Kenneth C. Crowe, Collision: How the Rank and File Took back the Teamsters* (New York: Scribner's, 1993).

²¹⁷ Krueger, *Gypsy on 18 Wheels*, 130.

culture that defined a true trucker as a self-made man, the Teamsters increasingly seemed parasitic, demanding membership dues without offering meaningful participation in union decisions in return. Writer Frederic Will, for instance, interviewed an independent trucker from Johnsons Corners, St. Louis, in the early 1980s who professed "a strong contempt for the Teamsters." Though the driver received his load assignments from trucking brokers who charged him ten percent of each load's revenue, he considered this a deal compared to paying "thirty percent to the Teamsters."²¹⁸ The pages of *Overdrive* magazine were consistently filled with anti-Teamsters diatribes, of which the following is representative: "I have lived for ten years without the Union and I can say I've been really happy.... I was hired for my willingness and dependability as a man. I don't have to sell myself to anybody to make a living."²¹⁹ The measure of a truck driving man in this formulation was not merely the thickness of his pay envelope, but his ability to fend for himself in a difficult economic environment.²²⁰

The deep involvement of government in regulating that economic environment came to be particularly despised by truckers in the 1970s. Even for truckers who were exempt from the economic regulations of the Interstate Commerce Commission, the presence of agents of government—whether local, state, or federal—was a persistent feature of the daily work experience. The most obvious agents were police, disparaged as "Smokeys" or "county mounties," whose speeding tickets and radar traps provided a constant source of irritation for drivers. Most truckers, however, understood the need for reasonable controls in the name of safety; in fact, truckers generally took great pride in their ability to avoid citations for violation of traffic laws.²²¹ Country musician Red

²¹⁸ Will, *Big Rig Souls*, 5.

²¹⁹ Homer Hanna to the Editor, *Overdrive* (Sep. 1966): 13-4.

²²⁰ Wyckoff and Maister found this to be the defining feature of the owner-operator trucker in their 1973 interviews with hundreds of individuals: "It became very clear to us that perceived independence was vitally important to the owner-operator; in fact, it was generally more important than income maximization—the average owner-operator makes less as an independent businessman than he would as an employee of a large truck line." Wyckoff and Maister, *Owner-Operator*, xvii.

²²¹ Ouellet, *Pedal to the Metal*, 155; "KGBS Honors Safe Trucker," *Music City News* (Jun. 1968): 11.

Simpson, for his part, recorded an entire album dedicated to highway police in 1966, *The Man behind the Badge*, seeing no contradiction with his catalog of trucking songs.²²²

Much more vexing for truckers were the bewildering array of state-level regulations and taxes. Each state set its own restrictions on maximum weight, height, and length of trucks and trailers; in Western states these rules were often quite liberal, while in the so-called "iron curtain" stretching through seven states from Illinois down to Mississippi, the limits were more strict. Furthermore, each state devised its own method for measuring a truck's weight or length. Some would consider the weight of the tractor separately from the trailer while others weighed the entire assembly; some measured the length of a truck from the front of the tractor to the rear of the trailer while others measured only the length of the trailer. Adding to the confusion, some states required truckers to register and license a vehicle in that state, while other states participated in reciprocity agreements that would allow a trucker to register only once and pay only one fee to gain authority to travel through multiple states. Certain states charged fuel taxes based on the mileage driven through the state, even if the driver did not purchase fuel in that state, while others charged a ton-mile tax instead. Interstate travel required a driver to have intimate knowledge of all of these rules and many more, a task that was still further complicated by the fact that the rules were constantly changing and often arbitrarily enforced.²²³ Truckers may have imagined themselves "kings of the open road," but that myth was belied by their need to navigate through a dense web of weigh stations, ports of entry, reams of paperwork, layers of taxation, and often contradictory regulations.

Federal regulations limiting the number of hours a driver could spend on duty were consistently despised since 1938. In that year, the Interstate Commerce

²²² Red Simpson, *The Man behind the Badge*, Capitol ST 2569. The album reached #34 on the *Billboard* country charts; his *Roll, Truck, Roll* album reached #7 the same year.

²²³ "Trade Barriers," *Motor Carrier* (Jan. 1940): 17; Clarence Neuendorf (Pres. Neuendorf Transportation Co.) to All Company Drivers, "Scaling Loads to Conform to State Axle Limits and Overweight Tickets," May 14, 1958, IBT 695 Records, Box 13, Folder 14; H. S. Norton, *Highway Transportation Barriers in 20 States* (Washington: USDA, Agricultural Marketing Service, 1957); Josephine Ayre, *Effects of State and Local Regulations on Interstate Movement of Agricultural Products by Highway* (Washington: USDA, Agricultural Marketing Service, 1961); Ouellet, *Pedal to the Metal*, 156-63; Agar, *Independents Declared*, 121-38.

Commission declared that truckers could drive no more than 10 hours in one day nor more than 60 hours in one week; furthermore, drivers were required to keep a "log book" tracking the time they spent driving, loading or unloading, resting, and sleeping.²²⁴ Truckers often called these records "lie books" since they were relatively easy to falsify (by undercounting fuel stops or counting dock waits as off-duty time, for instance).²²⁵ Even so, truckers deeply resented a system that not only devalued their individual judgment of their ability to drive safely, but also placed them between "conflicting demands of government and business."²²⁶ A trucking firm would often ask a driver to deliver a load in a specified amount of time—knowing full well that this would not be possible if the driver followed both speed limits and hours-of-service rules. For instance, a driver from San Antonio was routinely asked in the early 1960s to make second-morning deliveries to Los Angeles, a feat that he could only accomplish by working beyond the legal hours limit and "juggling the logs."²²⁷ For Otto Riemer, who dedicated an entire chapter to "Government" in a 1985 memoir of his life in trucking, such practices were a sign that big government had aligned with big business to subject the independent trucker to the arbitrary exercise of power. "Out on the road we are little more than checkers," wrote Riemer, "being moved on the boards of power by the agents of government.... Big Brother is no longer merely looking over our shoulders, he is slowly but surely taking complete control over our lives."²²⁸

Riemer's statements captured an anti-statist sentiment that by the mid-1970s was a central part of trucker culture, as one can easily see by opening any issue of *Overdrive* magazine from the period. Riemer's statement deserves particular attention, however, because it was delivered as part of a remarkably complex political orientation that cannot be labeled either conservative or libertarian. In a book ostensibly about his experiences as a truck driver, Riemer offered eloquent commentaries on a broad range of political

²²⁴ William R. Childs, *Trucking and the Public Interest: The Emergence of Federal Regulation, 1914-1940* (Knoxville: University of Tennessee Press, 1985), 164.

²²⁵ "Let's Overhaul the ICC!" *Overdrive* (Feb. 1962): 13-6.

²²⁶ Riemer, *Hammer Down*, 41.

²²⁷ A Trucker from Texas to the Editor, *Overdrive* (Nov. 1965): 7.

²²⁸ Riemer, *Hammer Down*, 52, 55.

topics, including opposition to abortion and drugs and welfare and taxation and corporate capitalism, as well as support for racial and economic equality and organized labor (but not the Teamsters) and animal rights and pollution control and free enterprise.²²⁹ Though such a mix of views may seem contradictory, for Riemer the entire package was coherent in its concern for the most vulnerable members of society and its opposition to all forms of institutionalization, bureaucratization, and corporatization. Riemer's version of populist politics was by no means his alone; as one driver told Studs Terkel: "It's a strange thing about truckers, they're very conservative. They come from a rural background or think of themselves as businessmen. But underneath the veneer they're really very democratic and softhearted and liberal.... You tell 'em they're liberal and you're liable to get your head knocked off. But when you start talking about things, the war, kids, when you really get down to it, they're for everything that's liberal."²³⁰ The rural backgrounds, daily work experiences, and absorbed mythologies of many truckers made them deeply resistant to intrusions of big business, big labor, and big government—but this did not necessarily make them social, economic, or political conservatives.²³¹

The populist politics of trucking culture erupted in an abortive political movement during the 1970s—the independent trucker shutdowns of 1973, 1974, and 1979. Though the shutdowns were triggered by a sudden rise of fuel prices following the OPEC oil embargo of 1973-4 and the energy crisis of 1979, the protests drew on a much deeper set of grievances. Like the agrarian revolts of the late 19th century, the independent trucker shutdowns of the 1970s were characterized by an angry dissatisfaction with the broad contours of industrial capitalism, the distant powers-that-be that applauded the self-made man while simultaneously constraining his

²²⁹ Ibid., passim.

²³⁰ Terkel, *Working*, 210.

²³¹ Truckers were not the only Americans to cultivate an "indigenous populism" based on a resistance to modern forms of capitalism, the state, and labor relations; as David A. Horowitz has argued, such views underpinned the politics of a broad range of more famous historical figures, from William Jennings Bryan to Father Coughlin to Robert Taft to Ronald Reagan. David A. Horowitz, *Beyond Left and Right: Insurgency and the Establishment* (Urbana: University of Illinois Press, 1997).

opportunities to be that man. Also like the agrarian protests, the shutdowns were characterized by the difficulties of organizing a political movement composed of fiercely independent individuals, making the truckers as unsuccessful as the Populists at achieving their direct demands for reform.

In the wake of the OPEC oil embargo, the price of diesel fuel rose from an average of 31 cents per gallon in May 1973 to 50 cents in September. Fuel became as scarce as it was expensive, prompting the Nixon administration to impose a nationwide 55 miles-per-hour speed limit in November in an effort to promote conservation. Owner-operator truckers suddenly found themselves in a tight squeeze, forced to pay more for fuel while also carrying fewer revenue-providing loads at the lower speeds. A spontaneous protest erupted in December 1973 when three truckers with the CB handles Dopey Diesel, Big Sissy, and Doggy Daddy stopped their tractor-trailers on the middle of Interstate 84 on the New York-Connecticut state line, blocking traffic for an hour and a half. Later that day, another blockade formed on Interstate 80 near Blakeslee, Pennsylvania and lasted all night.²³² These incidents were soon followed by owner-operator truckers blocking roads and encircling fuel pumps around the country, prompting Mike Parkhurst of *Overdrive* to call on all owner-operators to unite in a simultaneous nationwide shutdown on December 13 and 14 to dramatize their plight.²³³ Thousands of drivers heeded the call, whether by parking their rigs in the middle of a highway or by simply staying home. A number of owner-operators became more militant, seeking to prevent other truckers from moving on the highways by toting shotguns, puncturing tires, and throwing bricks and bottles at windshields. Angry truckers planted a bomb in an empty tractor cab in Arkansas, while at least 35 episodes of gunfire were reported by December 15.²³⁴ On that date, the first shutdown officially ended, having achieved nothing but unsympathetic

²³² "The Shutdown," *Overdrive* (Jan. 1974): 40; Harry Maurer, "Organizing the 'Gypsies'," *Nation*, Jan. 11, 1975, 11; "Pennsylvania Road Is Blocked as Truckers Protest Fuel Cost," *NYT*, Dec. 4, 1973, 51.

²³³ "Truck Driver-Owners Block Highways in Five States," *NYT*, Dec. 5, 1973, 34.

²³⁴ "Ohio Protest Goes On," *NYT*, Dec. 6, 1973, 1; Robert D. McFadden, "Trucks Are Damaged in Protest on Fuel Situation," *NYT*, Dec. 15, 1973, 70.

publicity and a determination among several leaders to coordinate a second and larger protest.²³⁵

That second protest came in January-February 1974, emerging out of a hastily organized conference at the Mayflower Hotel in Washington. Approximately 19 different groups had arrived to represent the distressed owner-operator, bearing names such as American Truckers for the Country and the Council of Independent Truckers, along with already established groups such as the Fraternal Association of Steel Haulers (FASH) and the Mid-West Truckers Association. Seeking to make the second shutdown more than just a publicity stunt, the leaders of these groups hammered out a list of demands, which would be presented to the Congress and President Nixon by a five-man group named the Truckers Unity Council, headed by William Hill, the president of FASH. Among the demands were a request to roll back the price of gasoline and diesel fuel to May 1973 levels, a guarantee of fuel supplies for commercial use, and a public audit of petroleum firms. The Council issued a statement calling for a nationwide shutdown on January 31, but the leader of the Ohio-based Council of Independent Truckers demanded the shutdown begin the day after the meeting, January 24. In response, the second shutdown began in Akron, Ohio, on the 24th, quickly spreading to Pennsylvania and then to most of the nation, from New Jersey to Oklahoma, in early February.²³⁶

Once again the protests were violent, with gunshots and bricks thrown through windshields killing two drivers and injuring dozens more. The governors of Florida, Pennsylvania, and Ohio called out the National Guard to ride shotgun with drivers who refused to be intimidated by the protestors. Even so the flow of commodities was drastically reduced, particularly impacting steel mills, farmers, and supermarkets.²³⁷ Beef packers and steel plants in the Midwest, cut off from their supplies, laid off thousands of workers; Secretary of Agriculture Earl Butz predicted that farmers would

²³⁵ "Trucker Tantrum," *NYT*, Dec. 6, 1973, 46; "Truckers Call off Protest in 2 States," *NYT*, Dec. 17, 1973, 43.

²³⁶ "Protesting Truckers Meet for a Drive to Washington," *NYT*, Jan. 21, 1974, 14; "Independent Trucker Coalition Calls for U.S. Shutdown," *NYT*, Jan. 25, 1974, 12; Wyckoff and Maister, *Owner-Operator*, 58-9; "2,200 Truckers Vote Continuation of Work Stoppage," *NYT*, Jan. 28, 1974, 19; Philip Shabecoff, "Gov. Shapp Urges Truck Tie-Up Halt," *NYT*, Feb. 4, 1974, 1, 22.

²³⁷ "Truckers in Ohio To Vote on Offer to End Shutdown," *NYT*, Jan. 27, 1974, 34; Agis Salpukas, "Truckers' Protest Cuts Flow of Food and Steel," *NYT*, Feb. 1, 1974, 58.

lose millions of dollars as perishables rotted in storage; grocers warned of "serious shortages" as consumers raided meat and produce cases; and McDonald's resorted to airlifts to bring hamburger patties to its Midwestern restaurants.²³⁸ On February 6, 7, and 8, the Truckers Unity Council met with William J. Usery, Jr., a Nixon aide, to present their list of demands. After tense negotiations, the government offered to institute a freeze on the retail price of diesel fuel until March 1 and grant a 6 percent surcharge on the rates of regulated trucking firms to absorb some of the cost of fuel. The offer was essentially meaningless, since Nixon had already frozen the price of fuel, and the rate increase would provide no relief for owner-operators who did not contract with regulated carriers (such as produce and livestock haulers). Thousands of truckers refused to acknowledge the Unity Council's call for an end to the shutdown, agreeing with trucker Ralph Meeks of Birmingham, Alabama, who called the "so-called settlement" "inadequate." By February 12, however, most truckers had given up on achieving more, and returned to the roads "trying to get a few bucks in their pocket."²³⁹ Mike Parkhurst, who had not participated in the negotiations, called the deal a "sellout" and used the pages of *Overdrive* to call for "The Real Shutdown" in May. The planned protest never materialized, however, with many truckers believing "they could not afford to shut down again."²⁴⁰

Fuel costs and speed limits may have sparked the conflagration, but something much deeper was at stake. A truck driving man was supposed to be the king of the open road, the backbone of America, not a mere cog in the wheels of global energy politics. Harry Davis, an owner-operator hauling produce out of Florida, painted on the side of his trailer what he saw as the mission of the shutdowns: a "Fight for Freedom" and "The American Way."²⁴¹ By refusing to haul the loads that made the American consumer's

²³⁸ Steven R. Weisman, "Strike of Truck Drivers Makes 75,000 Jobless," *NYT*, Feb. 6, 1974, 20.

²³⁹ William Robbins, "Truckers Reach Accord, Leaders Ask Strike End," *NYT*, Feb. 8, 1974, 65; Philip Shabecoff, "Most Truckers Still Idle," *NYT*, Feb. 9, 1974, 1, 14; "Most Truckers End 11-Day Strike," *NYT*, Feb. 12, 1974, 69.

²⁴⁰ "Another Truck Strike Set," *NYT*, Apr. 2, 1974, 7; "Truckers' Strike Called a Failure," *NYT*, May 14, 1974, 75; Maurer, "Organizing the 'Gypsies'," 14.

²⁴¹ "Thousands of Truck Drivers Stay off the Road to Protest Effects of Fuel Shortage," *NYT*, Dec. 14, 1973, 18.

lifestyle possible, truckers hoped to call widespread attention to the importance of their work and to the threats posed to their sense of independent manhood. Those threats were multiple. Powerful corporations seemed at least partly to blame, as one group called on truckers to get off the highways and blockade the American Petroleum Institute instead for its promotion of "profiteering by the major oil companies."²⁴² The Teamsters also came under fire—often quite literally, since the trucks of "company drivers" who worked for a guaranteed wage (and therefore did not immediately feel the squeeze of rising fuel costs) were generally the objects of thrown bottles and shotgun blasts.²⁴³ And most important, the government seemed directly to blame. "The Great White Fathers back in Washington don't give a damn about truck drivers," said John Welcher, a truck driver from Bennett, Iowa.²⁴⁴

For truckers like Welcher, the nation's political leaders seemed completely out of touch with the economic reality and work experiences of the common man. This fact was made especially clear by Nixon's imposition of a 55 miles-per-hour speed limit. Drivers insisted that they achieved better fuel economy at 70 miles per hour, since their engines were geared for greatest efficiency at high speeds. It did not matter that engineers at General Motors had used computer models demonstrating that speeds above 55 increased air resistance and brought lower fuel economy.²⁴⁵ The very idea of a Washington bureaucrat telling a professional driver how to do his job produced a deep sense of loathing. For years, Big John Trimble refused to say "55" on his all-night trucker radio show, considering the term an "obscenity."²⁴⁶ Adding to the truckers' ire was the fact that the Nixon administration not only did not provide any real relief for the owner-operators, but attributed the "settlement" that was reached to Frank Fitzsimmons, the president of the Teamsters, rather than to the Truckers Unity Council.²⁴⁷ The

²⁴² Philip Shabecoff, "Truck Drivers Plan National Stoppage," *NYT*, Dec. 8, 1973, 18.

²⁴³ David Harris, "The Truckers Go to Washington," *Rolling Stone*, Apr. 23, 1974, 55-6.

²⁴⁴ Robert Lindsey, "The Angry Truck Driver: 'We've Got to Show 'em'," *NYT*, Dec. 5, 1973, 1.

²⁴⁵ Victor K. McElheny, "Truck 'Gas' Saving at 50 M.P.H. Found," *NYT*, Dec. 6, 1973, 41.

²⁴⁶ Harden, "Big John," 4.

²⁴⁷ Wyckoff and Maister, *Owner-Operator*, 61; William Robbins, "Nixon Rebuffed in Attempt to Settle Trucker Strike," *NYT*, Feb. 6, 1974, 1.

government appeared to have aligned with big trucking companies, petroleum firms, and organized labor to crush the independent working man.

Beyond an exasperation with the specific actions and inactions of the powers-that-were, however, the truckers were protesting the very existence of those powers. Corporations, labor unions, and the regulatory agencies of the government seemed to be sucking the economic lifeblood from the men who made America run. "We can't take no more," explained Joseph Lehoe, an owner-operator who participated in the shutdowns. "We're caught in the middle," he continued, meaning that maintaining his livelihood depended on the difference between the revenues gained from shippers—who pushed for the lowest possible freight rates—and the costs of trucking—which were pushed as high as possible by fuel companies and state and federal taxation and regulation.²⁴⁸ This feeling of economic helplessness explains why truckers like Lehoe—who professed to have been "enraged" by the student anti-war protests of the 1960s—would engage in a violent mass public protest even though most would not have considered themselves radical.²⁴⁹ In fact, for many truckers the greatest achievement of the shutdowns was a renewed sense of independent manhood. As "Big Sissy," one of the instigators of the first blockade on I-84 in Connecticut, put it: "Maybe we're all getting back our self-respect. Feels good to walk tall and look a man in the eye again, doesn't it?"²⁵⁰ Or in the words of Don Miller, "the average truck driver ... has finally spoken."²⁵¹ The shutdowns failed to achieve any of the truckers' stated aims, but they provided a public forum for truckers to assert their importance to the American economy and demand respect as bearers of true manhood.

²⁴⁸ Agis Sakulpas, "Owner Driver Gives Case for Fuel Protest," *NYT*, Jan. 31, 1974, 19. When the ICC interviewed a sample of 479 owner-operators in 1977, it received similar responses from more than half of the respondents. One trucker, for instance, pointed out that although the cost of his tractor was "astronomical" at \$26,000, that amount was still "\$5.41 short of the total that it cost me to operate my tractor.... When fuel cost has risen 110 percent and ... freight rates have been increased less than 30 percent, there is no way owner-operators can survive." ICC, *Independent Trucker*, 15.

²⁴⁹ Ibid.; Maurer, "Organizing the 'Gypsies'," 15; Charles Bisanz, "The Anatomy of a Mass Public Protest Action: A Shutdown by Independent Truck Drivers," *Human Organization* 36, no. 1 (1977): 63-9.

²⁵⁰ "The Shutdown," *Overdrive*, 40.

²⁵¹ Agis Salpukas, "Protest Transforms Driver in Toledo into 'Biggest Truck Company' Around," *NYT*, Dec. 7, 1973, 1.

That respect came in the mid-1970s, though perhaps not in the exact form desired, when a sudden outpouring of popular culture media celebrated truckers as the "last American cowboys." Author Jane Stern used the phrase as the subtitle of her 1975 book, in which she admitted that "the reality can never match the legend," but nonetheless dedicated 163 pages of text and photographs to comparing truckers to the riders of the Old West.²⁵² The term held a certain irony, since truckers used "cowboy" as a derogatory epithet for reckless drivers or ridiculous dressers—"Those who are just plain unable, mechanically speaking, to own and operate a rig. The ones with the 'double clutching boots' and the 'chain drive billfolds'," as one driver put it.²⁵³ The idea of the trucker as a renegade figure who refused to bow to authority, however, gained purchase in the social climate of the 1970s, as the "Southernization" of America brought an explosion of cultural forms celebrating individual freedom, family values, and hell-raising in the name of defying mainstream urban modernity.²⁵⁴ Merle Haggard's tongue-in-cheek 1969 hit song "Okie from Muskogee" celebrated moonshine and patriotism over marijuana and free love.²⁵⁵ "Okie" helped define a new sub-genre of music known as "outlaw country," in which Haggard, Johnny Paycheck, David Allan Coe, and Waylon Jennings used their prison records as marketing tools. Artists who had not served time used other cues to cultivate a country version of countercultural rebellion; Willie Nelson wore sandals and a ponytail, while Johnny Cash wore only black and dabbled in drugs.²⁵⁶ By the end of the decade, Jennings sang the theme song to the television show *The Dukes of Hazzard*, in which "good ol' boys" Bo and Luke Duke used their souped-up Dodge Charger—painted with Confederate symbols and named the "General Lee"—to humiliate the witless police and greedy capitalists of Hazzard County, Georgia.

²⁵² Stern, *Trucker*, 13.

²⁵³ John P. Stevenson to the Editor, *Overdrive* (Aug. 1964): 13-6.

²⁵⁴ Bruce J. Schulman, *The Seventies: The Great Shift in American Culture, Society, and Politics* (New York: Free Press, 2001), esp. 102-20;

²⁵⁵ James C. Cobb, "From Muskogee to Luckenback: Country Music and the 'Southernization' of America," in *Redefining Southern Culture* (Athens: University of Georgia Press, 1999), 78-91.

²⁵⁶ Malone, *Don't Get above Your Raisin'*, 136-44.

Sandwiched between the two cultural endpoints of "Okie" and the *Dukes of Hazzard* came a flood of trucking movies.²⁵⁷ The two most popular movies, *Smokey and the Bandit* (1977) and *Convoy* (1978), presented very different versions of the rebel trucker, though the narrative tension in both films centered on truckers flouting the long but incompetent arm of the law. Burt Reynolds, as "The Bandit" in stuntman-turned-director Hal Needham's wildly popular trucking comedy, guided an 18-wheeler filled with contraband Coors beer from Oklahoma to Georgia, evading and taunting Buford T. Justice (played by Jackie Gleason) and a host of other "Smokeys" along the way. *Smokey and the Bandit* was the first major trucking movie since *They Drive by Night*, and the contrasts between it and the earlier film are striking.²⁵⁸ Where the 1940 film had centered on the struggles of a common working man to become economically independent, *Smokey* imagined trucking as a hedonistic joyride, entirely divorced from economic reality, in which Burt Reynolds's character displayed his manhood by seducing women, cavorting through the countryside, and otherwise defying "establishment" standards of propriety.²⁵⁹ Like the television show *The Dukes of Hazzard* which it helped to inspire, *Smokey and the Bandit* was an escapist fantasy, depicting the unbridled enthusiasm of rural outlaws resisting authority figures. (See **Figure 5.5.**)

²⁵⁷ Two television shows of the period also centered on truck drivers: *Movin' On* (1974-75, theme song by Merle Haggard) and *BJ and the Bear* (1979-81).

²⁵⁸ Seven trucking films were released between *They Drive by Night* and *Smokey and the Bandit*, though none gained comparable commercial success. They were *Thieves' Highway* (1949), *The Wages of Fear* (1953), *The Long Haul* (1957), *Deadhead Miles* (1972), *White Line Fever* (1975), *Great Smokey Roadblock* (1976), and *Citizens Band* (1977).

²⁵⁹ *Smokey and the Bandit*, dir. Hal Needham, 97 min., Universal Studios, 1977, digital video disc. The selection of Coors beer as a plot device was appropriate, since the Coors company at the time marketed its beer only in western states, giving it an image as an anti-Eastern working-man's brew. Furthermore, the company's owner, Joseph Coors, was also a right-wing politician famous for his opposition to hippies, the federal government, the "liberal establishment," birth control, and labor unions. See Grace Lichtenstein, "Rocky Mountain High," *New York Times Magazine*, Dec. 28, 1975, 14-16.



Figure 5.5: The Bandit

In contrast to the neatly uniformed driver of the 1940s, this renegade trucker wore his shirt half-unbuttoned when his picture was taken by Marc F. Wise at a truck stop in Ontario, California, in 1988. The horse's-head belt buckle and the Confederate Battle Flag design on his long-nose Peterbilt publicly declared him as a "Bandit." Marc F. Wise, *Truck Stop* (Jackson: University Press of Mississippi, 1995).

Unlike *Smokey and the Bandit*, the makers of the 1978 movie *Convoy* intended to make a broader statement about the truck driving cowboy's place in the modern world. Sam Peckinpah directed the movie. As a former scriptwriter for the television show *Gunsmoke*, and famed for his ultra-violent 1969 western *The Wild Bunch*, Peckinpah wanted *Convoy* to be a new kind of western; Mack trucks would replace quarter horses, Smokeys would replace federal marshals, and truck stops would replace saloons as the loci of spontaneous brawls. "Outlaw" country singer/songwriter Kris Kristofferson played the part of "Rubber Ducky," an independent trucker with an icy-blue stare whose

control over his big rig is so complete that he does not even need to wear a shirt to drive. Nor does he need the Teamsters, which he informs the audience "ain't my damn union." "I'm independent," declares the Duck, emphasizing that "there ain't many of us left." The Duck is a wanderer, his freedom constrained only by the exercise of state authority, represented by Sheriff "Dirty" Lyle Wallace (played by Ernest Borgnine). Lyle extorts a kickback out of the Duck and a group of fellow truckers caught for speeding, provoking the Duck into a retaliatory punch. Forced to flee as Lyle, handcuffed to a barstool, calls in backup, the Duck inadvertently becomes the leader of a "mighty convoy." With the help of CB radios, the convoy attracts hundreds of truckers who hail the Duck as a "people's hero" for his defiance of the 55-mile-per-hour speed limit. Federal Agent Hamilton arrives in a "bear in the air" (a police helicopter), using a "computerized system" to lock onto the truckers' CB frequency and inform the Duck that he is in violation of federal law. The convoy nonetheless continues to barrel down the highway, as the Duck sneers "well, piss on your law!" to Lyle, ultimately confronting the machinery of the state directly in an explosive Hollywood-style climax.²⁶⁰

Although the movie never makes clear what exactly the Duck was protesting, the broad appeal of the movie was later explained by C. W. McCall, a country musician whose 1975 hit song "Convoy" was the direct inspiration for the movie. "*Convoy* appeals to the rebel instinct in Americans," said McCall, making it possible for he and Kris Kristofferson "to make a few statements—about how regulated our lives have become and how many of our freedoms we have lost."²⁶¹ Like Peter Fonda's character "Captain America" in the 1969 film *Easy Rider*, the Duck was a renegade for whom the open road was a source of, and solace for, anti-establishment yearnings. Unlike Captain America, however, the Duck found that solace not in smoking marijuana and harboring an elitist grudge against small-town conservatives, but by embracing his traditional, rural manhood in his lonely search for the soul of America. *Convoy* was panned by critics for its undeniable tackiness, but it was a hit with moviegoers. Furthermore, the movie struck

²⁶⁰ *Convoy*, dir. Sam Peckinpah, 110 min., EMI Films, 1978, videocassette.

²⁶¹ Quoted in Kenneth L. Woodward, Peter S. Greenberg, and Susan Malsch, "The Trucker Mystique," *Newsweek*, Jan. 26, 1976, 44.

a chord among truckers who saw in the movie a dramatization of the fact, as one driver put it, that "Truckers ain't organization people!"²⁶²

One year after the release of *Convoy*, an actual independent trucker protest emerged, with angry drivers calling for the complete dismantling of federal economic regulations in the trucking industry. Like the protests of 1973-74, the shutdowns of the summer of 1979 were provoked by a rapid rise of fuel costs, as part of the energy crisis instigated by the overthrow of the Iranian Shah.²⁶³ After several years of gaining publicity as "cowboys," however, truckers in the 1979 shutdown sought to demonstrate that truckers were not just renegades, but that their independent way of living and doing business was central to the American economy and its social fabric. The shutdown began on June 5, 1979, when a convoy of truckers arrived in Washington and circled the Capitol building, while hundreds of other truckers parked their rigs on interstates in the Midwest and West. Mike Parkhurst, as president of a new group called the Independent Truckers Association (representing 30,000 drivers), seized the moment and called for a nationwide shutdown; by the middle of June, blockades had spread across the country. By the end of June, approximately 75,000 truckers had stopped driving. Once again the protests were violent, as roving bands of truckers set fire to empty trucks and shot at the windshields of drivers who refused to stop. At least nine states called out the National Guard to protect company drivers. By the time the shutdown ended in early July, at least one driver had been shot and killed, while dozens more were injured. As in the 1973-74 shutdowns, independent trucker groups formed a Unity Council, headed by William Hill of FASH. The coalition demanded that the Carter Administration reduce the price of diesel and make more fuel available to truckers, remove the 55-mile-per-hour speed limit, ease weight and length restrictions on highways, and provide a 10 percent freight surcharge to compensate for rising fuel costs.²⁶⁴

²⁶² Will, *Big Rig Souls*, 84.

²⁶³ Franklin Tugwell, *The Energy Crisis and the American Political Economy: Politics and Markets in the Management of Natural Resources* (Stanford: Stanford University Press, 1988), 118-27.

²⁶⁴ "Independent Truckers, Protesting Diesel Oil Prices, Blockade Fuel Stops," *NYT*, Jun. 5, 1979, 18; "14 States Affected by Trucker Protest," *NYT*, Jun. 8, 1979, 14; "Trucks Draw Shots in 2d Day of Strike," *NYT*, Jun. 9, 1979, 8; "Violence in Truckers' Strike as Grain Elevators Fill Up," *NYT*, Jun. 11, 1979, 16; Judith Cummings, "Strike by Truckers over Fuel Expands," *NYT*, Jun. 14, 1979, 16; Ernest Holsendolph,

Unlike the shutdown of 1973-74, however, this time independent truckers made a more organized effort to gain the ear of the President by garnering sympathy from consumers. This strategy came primarily in the form of efforts to block the movement of food from farms to supermarkets. As Oscar Williams, an official with Parkhurst's Independent Truckers Association, declared: "I can predict that when housewives in the major cities go to market and cannot find peaches, cherries, or fresh meat, or find they have to pay double for these goods, there will be one hellacious uproar in Washington."²⁶⁵ The centrality of trucking to the food economy became apparent as meatpacking plants and grain elevators were forced to shut down. In Montana, where it was estimated that half of the state's truckers were owner-operators, deliveries of livestock to packing plants and of boxed beef to supermarkets halted almost completely.²⁶⁶ Produce began rotting across the country, from Washington state cherries, cucumbers, squash, and potatoes to North Carolina green beans and potatoes, to California strawberries and lettuce—all foods that relied solely on owner-operator truckers.²⁶⁷ Peach growers in Georgia halted their harvest; dairy farmers in Pennsylvania dumped milk; and a Minnesota pork packing plant shut down.²⁶⁸ Truckers blockaded a Stop & Shop supermarket distribution center in Connecticut, attempting to make the problems of rural truck drivers directly apparent to consumers in New York City, New Jersey, Connecticut, and Massachusetts.²⁶⁹ The point of these blockades, as Independent Truckers Associations spokesman Don Swanson argued, was to show consumers that the cost of diesel fuel translated directly into increased food costs. "We could go ahead and pay \$2 for a gallon of diesel," sated Swanson, "but people are going to have to pay \$6 for a pound of hamburger. We don't want to see that. We have to buy

"Independent Truckers Calling National Work Stoppage," *NYT*, Jun. 19, 1979, 18; Peter Bonventre, et al., "Truckers in Revolt," *Newsweek*, Jun. 25, 1979, 45; Tom Morgenthau, et al., "The Energy Plague," *Newsweek*, Jul. 2, 1979, 22; "When Truckers Threatened the Nation," *U.S. News and World Report*, Jun. 25, 1979, 10.

²⁶⁵ "One Hellacious Uproar," *Time*, Jul. 2, 1979, 22.

²⁶⁶ Peter Kihss, "Food Shipments Snarled by Truck Stoppages in 37 States," *NYT*, Jun. 15, 1979, 1; William Robbins, "Montana Feels the Protest Pinch," *NYT*, Jun. 15, 1979, 1.

²⁶⁷ "Truckers, Continuing Protest, Cut Gasoline and Diesel Fuel Supplies," *NYT*, Jun. 17, 1979, 22.

²⁶⁸ Ernest Holsendolph, "Federal Officials Seek to Head off Truckers' Stoppage," *NYT*, Jun. 20, 1979, 1; "Spreading Toll of Truckers' Strike," *U.S. News and World Report*, Jul. 2, 1979, 4.

²⁶⁹ Robert Hanley, "Halt by Truckers Leads to Worries on Food Supply," *NYT*, Jun. 22, 1979, B4.

hamburger, too."²⁷⁰ Despite causing panic buying sprees in supermarkets, however, the truckers' shutdowns and blockades proved too sporadic and unorganized to achieve a lasting effect on food supplies.²⁷¹ Without an effective means of central organization, the 1979 shutdowns ended much like the first, with the Carter Administration offering only limited concessions to the truckers, including increased allocation of diesel fuel, a 7 percent freight surcharge, and a promise by the Department of Transportation to explore the possibility of creating uniform truck weight and length laws.²⁷²

There was one major difference, however, between the results of the 1973-74 shutdowns and those of 1979. Although the 1979 strikes did not produce a "hellacious uproar" in Washington, they did lead President Carter, along with Massachusetts Senator Edward Kennedy, to advocate deregulation of the trucking industry.²⁷³ Although the price of fuel was the immediate cause of the 1979 protests, the underlying goal was the elimination of the economic regulatory structures of the ICC. The main group behind the event was Mike Parkhurst's Independent Truckers Association (ITA), which he had formed in 1975 primarily to take down the ICC. "I want competition, open and fair competition," Parkhurst told a reporter for *Esquire* in 1977. "I want unregulated trucking."²⁷⁴ As vice president of the ITA William Scheffer stated at the height of the shutdowns in late June 1979, the "primary aim" of the ITA-orchestrated shutdowns was not only to get more fuel at lower prices, but "the dismantling of a giant Federal bureaucracy that has grown to govern the trucking industry since the mid-1930's."²⁷⁵ As Parkhurst and others saw it, deregulation would strike a direct blow not only at the government bureaucracy that limited the economic freedom of the independent trucker, but would also permanently damage the Teamsters union by allowing the unchecked rise of small, decentralized trucking firms relying on non-union owner-operators.²⁷⁶ It is not

²⁷⁰ Peter Bonventre, et al., "Truckers in Revolt," *Newsweek*, Jun. 25, 1979, 45.

²⁷¹ Robert Hanley, "Truck Strike in 3d Week," *NYT*, Jun. 28, 1979, B8; Douglas E. Kneeland, "Truckers' Protest Appears to Fade; No Serious Shortage of Food Found," *NYT*, Jun. 30, 1979, 1, 15.

²⁷² "Independent Truckers End Strike after Mass Defections," *NYT*, Jul. 10, 1979, 12.

²⁷³ "When Truckers Threatened the Nation," *U.S. News and World Report*, Jun. 25, 1979, 10.

²⁷⁴ Harry Crews, "The Trucker Militant," *Esquire*, Aug. 1977, 146.

²⁷⁵ Richard D. Lyons, "Truckers' Anger Born of Threats to Their Self-Reliant Way of Life," *NYT*, Jun. 24, 1979, 16.

²⁷⁶ "One Hellacious Uproar," 27.

clear whether President Carter and Senator Kennedy realized that this would be the ultimate result of full deregulation, but as we shall see in the concluding chapter, this was exactly what happened after the passage of the Motor Carrier Act of 1980. Truckers who had all along sought to be independent men—free of government bureaucracy, corporate control, and dues-demanding unions—would seem to have achieved exactly what they wanted.

Conclusion

The connections between rural life and long-haul trucking created the conditions for a neo-populist revolt in the 1970s that ultimately pushed the rural economy one step closer to utter chaos. Owner-operator truck drivers, encouraged by popular culture representations of themselves as "the last American cowboys," had become central to the American food economy by that time, and had also imagined themselves to be the true inheritors of the agrarian myth. That new agro-industrial myth came partly out of the work experience of long-haul trucking, which for many farm boys provided an escape from the tenuous business of farming in the 1930s, '40s, and '50s, yet provided a similar sense of manly independence. Trucking provided some men with the chance to run a small business, and it provided many more with a feeling of autonomy as they roamed through the rural industrial landscape, controlling a giant piece of machinery that made the marketing machinery of modern capitalism function.

When the wheels of that machinery pressed in more visibly on truckers during the energy crises of the 1970s, however, the mythology of independence shattered, driving thousands of men who despised mass protests to become radical protestors. The anger emerged out of years of frustrations experienced by truckers who felt the promise of independent manhood was threatened by large trucking firms, an increasingly undemocratic Teamsters union, and layers of government regulations. Like the agrarian Populist movement of a century before, the trucker shutdowns were founded on a rural antipathy towards distant centers of economic and political power, centers of power whose very livelihood depended on the productive labor of the rural people who fed

them. William Jennings Bryan had famously pointed out that Eastern industrialists could "Burn down your cities and leave our farms, and your cities will spring up again as if by magic; but destroy our farms, and the grass will grow in the streets of every city of the country."²⁷⁷ Truckers' statements about consumers paying \$6 for a pound of hamburger carried less rhetorical flourish, but emerged nonetheless from a similar rural producerist mentality. William Hill, the head of the Fraternal Steel Haulers Association, lamented the "farm background" of most of the truckers who participated in the shutdowns of the 1970s, a background which he understood to be the cause of the fierce individualism that prevented them from effectively organizing. "All these guys have that American dream, man, that they're gonna work hard and they're gonna be millionaires," scoffed Hill. "And they'll own their own trucking company some day. Bullshit."²⁷⁸ But that "farm background" was exactly what drove truckers to cultivate and believe in the agro-industrial myth of long-haul trucking as a path to manly independence. In the context of the postwar rural industrial landscape, however, truckers' populist protests resulted in exactly the opposite result of the Populist revolt of the 1890s. Whereas the agrarian Populists ushered in a Progressive era in which social cohesion and state intervention shaped the rural social and economic fabric, the trucker shutdowns of the 1970s ushered in an era in which independence came at a great social cost.

²⁷⁷ William Jennings Bryan, *The Cross of Gold: Speech Delivered before the National Democratic Convention at Chicago, July 9, 1896* (Lincoln: University of Nebraska Press, 1996).

²⁷⁸ Maurer, "Organizing the Gypsies," 12.

Conclusion

The decade of the 1980s was a time of crisis in rural America. Between 1979 and 1981, a series of global economic events led to a steep decline in American farm prices, threatening family farmers with inescapable debt. Angry farmers drove in tractorcades to Washington, DC, demanding relief, while Willie Nelson and other country musicians held a series of "Farm Aid" concerts to help farmers facing foreclosure.¹ The chaotic nature of the late twentieth-century rural economy was not confined to Midwestern family farm owners. Migrant farm workers, meatpacking employees, and retail workers receiving minimum wages also found that rural realities did not necessarily live up to American dreams.² Rural truck drivers, in comparison, would seem to have fared rather well as the inheritors of an agrarian mythology of manly independence, global energy politics notwithstanding. But after the passage of the Motor Carrier Act of 1980, deregulation brought chaotic competition, remaking the entire trucking industry along the lines forged by agricultural experts in the 1940s and 1950s intent upon solving the farm problem.

The deregulatory impulse that led to the passage of the Motor Carrier Act of 1980 was well under way long before the independent trucker shutdowns of the mid- and late-1970s. As explored in Chapter 1, agricultural and transportation economists consistently saw the agricultural exemption in trucking as an example of an effective free-market solution to the problem of maintaining high prices for producers while simultaneously keeping consumer prices low. This was the essential theme of a 1970 tract by a group of Harvard Law School students working with Ralph Nader, who attacked the Interstate Commerce Commission for driving up consumer prices by allowing regulated truckers to

¹ Kathryn Marie Dudley, *Debt and Dispossession: Farm Loss in America's Heartland* (Chicago: University of Chicago Press, 2000); Peggy F. Barlett, *American Dreams, Rural Realities: Family Farms in Crisis* (Chapel Hill: University of North Carolina Press, 1993).

² Jim Hightower, *Hard Tomatoes, Hard Times: The Failure of the Land Grant College Complex* (Washington: Agribusiness Accountability Project, 1972); Deborah Fink, *Cutting into the Meatpacking Line: Workers and Change in the Rural Midwest* (Chapel Hill: University of North Carolina Press, 1998); Bob Ortega, *In Sam We Trust: The Untold Story of Sam Walton Wal-Mart, The World's Most Powerful Retailer* (New York: Times Business, 2000).

monopolize freight transportation.³ Presidents Nixon and Ford both supported deregulation of trucking on the advice of the Council of Economic Advisors, but both administrations were stymied by sustained opposition to regulatory reform from regulated trucking firms and the International Brotherhood of Teamsters. Jimmy Carter entered the White House in 1976 determined to reform trucking policy, telling an owner-operator trucker at a town meeting in 1977 that "substantial deregulation" would level the playing field for independent drivers, to which end Carter appointed a pro-deregulation commissioner to the ICC. In 1978, the newly anti-monopolistic ICC defied Congress, the Teamsters, and the American Trucking Associations by easing restrictions on entry, routing, and rate-making in trucking—thus beginning a process of dismantling the regulatory structure established in 1935. The process continued in January 1979 when Senator Edward M. Kennedy, seeking an issue to promote his planned presidential candidacy, proposed a sweeping deregulation bill to embarrass Carter for failing to deliver on his 1977 promise to owner-operator truckers. Kennedy enrolled a motley crew of supporters in his effort, including Ralph Nader on behalf of consumers, the National Association of Manufacturers and the Conservative Union on behalf of free-enterprise advocates, and Mike Parkhurst representing the nation's independent truckers. In June 1979, President Carter joined with Kennedy, asking Congress "to reduce substantially federal economic regulation over the trucking industry." Despite strong opposition from the American Trucking Associations and the Teamsters, Carter successfully pushed trucking deregulation through Congress in the form of the Motor Carrier Act of 1980.⁴

The success of trucking deregulation despite overwhelming opposition from powerful interest groups depended upon Carter's framing of the issue as an anti-

³ Robert Fellmeth, *The Interstate Commerce Omission: The Public Interest and the ICC* (New York: Grossman, 1970).

⁴ Dorothy Robyn, *Braking the Special Interests: Trucking Deregulation and the Politics of Policy Reform* (Chicago: University of Chicago Press, 1987); Lawrence S. Rothenberg, *Regulation, Organizations, and Politics: Motor Freight Policy at the Interstate Commerce Commission* (Ann Arbor: University of Michigan Press, 1994), 221-43; John Richard Felton and Dale G. Anderson, eds., *Regulation and Deregulation of the Motor Carrier Industry* (Ames: Iowa State University Press, 1989), 143-62; Ernest Holsendolph, "I.C.C. Adds Competition in Trucking," *New York Times*, Nov. 21, 1978, D1, D6. Trucking was not the only industry deregulated in this period; the airlines, railroads, communications, banking, and energy industries were also deregulated. See Richard H. K. Vietor, *Contrived Competition: Regulation and Deregulation in America* (Cambridge, MA: Harvard University Press, 1994).

inflationary measure that would benefit American consumers to the tune of \$5 billion.⁵ With this, Carter essentially affirmed the arguments that agricultural policymakers had been making since the early 1930s; namely, that an atomized, highly competitive trucking industry would reduce the cost of transporting goods, to the benefit of producers and consumers alike. Particularly in the first decade following World War II, when the federal government's role in the agricultural and food economy came under sustained attack from both ends of the political spectrum, the flexibility of trucking, especially exempt agricultural trucking, provided a convenient means of "solving" the farm problem by pushing the politics of farm and food pricing into the hands of industrial food processors and supermarkets. Agricultural experts had cooperated with agribusiness industries, relying on highway transportation to reshape the economic geography and politics of milk, beef, and frozen food production and marketing as seemingly non-statist approaches to the problem of maintaining high prices for farmers while keeping consumer food prices low. The success of this "free market" approach in redefining farm and food pricing as an economic problem, rather than a political-economic problem, appealed to the Carter Administration, which saw in deregulation of the entire trucking industry an opportunity to defuse widespread consumer and business unrest over the "stagflation" of the late 1970s.

The passage of the Motor Carrier Act of 1980 led to a level of chaos in the trucking industry unknown since the early 1930s. By easing the restrictions on market entry, the Act made it possible for thousands of small trucking firms, especially independent owner-operator truckers, to begin competing for general freight. One truck driver wrote in a 1983 *New York Times* editorial that deregulation "created more gypsies than the market can bear" by encouraging a larger number of truckers to fight for an unchanging amount of freight.⁶ Owner-operator truckers who had called for deregulation during the shutdowns of the 1970s initiated a very different kind of shutdown in May 1982, when the Independent Truckers Unity Committee decided that

⁵ "Carter Proposes a Sweeping Bill Deregulating Trucking Industry," *New York Times*, Jun. 22, 1979, 1.

⁶ Timothy D. Barton, "Small Truckers' Life: Hard, Getting Harder," *New York Times*, Feb. 11, 1983, 27.

"deregulation ... has caused such a drop in revenues that most owner-operators are operating at below what it costs them [to drive]." ⁷ Though this shutdown did not gain widespread support, Mike Parkhurst initiated another full-scale protest in January 1983, after President Ronald Reagan signed a bill that increased the federal fuel tax and other fees for truckers. ⁸ Parkhurst hoped to reverse the tax legislation by orchestrating a nationwide shutdown of truckers who were pressed not only by fuel costs but by the extreme competition that came in the wake of deregulation. Reagan scolded Parkhurst for his tactics, informing the truckers that they could simply pass on the increased costs of fuel taxes to consumers. The truckers retorted that the cut-throat competition under deregulation prevented them from doing so; that same competitive environment also discouraged most truckers from joining the shutdown, despite scattered violence reminiscent of the 1970s protests, for fear of being driven entirely out of business. ⁹

Deregulation also led to a rapid decline in the power of the Teamsters union to gain wage and fringe benefits for company drivers. The easing of market entry restrictions encouraged the emergence of trucking firms specializing in hauling only truckloads of freight, thereby avoiding the need to invest in the terminal facilities required to coordinate less-than-truckload freight movements. Most of these new truckload firms were small and usually located in rural areas, following the pattern set over the previous decades by the exempt agricultural trucking industry. Larger firms, particularly J. B. Hunt, also joined in the competition for truckload freight. But whether the new trucking companies were small or large, nearly all were non-union. By 1996, the nation's overall freight bill had reached an all-time low when adjusted for inflation, but at the cost of transforming big rigs into "sweatshops on wheels" as trucking companies

⁷ "Independent Truckers Call Strike in a Dispute over Hauling Rates," *New York Times*, May 1, 1982, 12.

⁸ "Independent Truckers Call Strike over Tax on Gasoline," *New York Times*, Jan. 8, 1983, 8; "Some Trucks Halt to Protest Gas Tax," *New York Times*, Jan. 31, 1983, 8.

⁹ Ernest Holsendolph, "Violence Spreads in Trucker Strike," *New York Times*, Feb. 2, 1983, B20; Ernest Holsendolph, "Truckers' Strike Delays Some Goods," *New York Times*, Feb. 3, 1983, 1, 16; William Serrin, "Fear Rides in Cabs of Nonstriking Truckers," *New York Times*, Feb. 4, 1983, 1, 10; Ernest Holsendolph, "President Assails Trucker Violence as Strike Goes On," *New York Times*, Feb. 5, 1983, 1, 28; Ruth Mari, "Truckers Confident on Strike's Success," *New York Times*, Feb. 6, 1983, NJ25; Kenneth B. Noble, "11-Day Trucker Strike Called off amid Signs Protest Had Collapsed," *New York Times*, Feb. 11, 1983, 13.

slashed wages while the Teamsters became nearly irrelevant to the long-haul industry.¹⁰ Deregulation proved to work exactly as it had been intended—to place on "independent" truckers the brunt of the burden of satisfying both producers and consumers by driving down the cost of the transportation that connected them. As this history of the relationship between trucking, agriculture, and food politics has shown, such a result is anything but surprising.

¹⁰ Cynthia Engel, "Competition Drives the Trucking Industry," *Monthly Labor Review* 121 (Apr. 1998): 34-41; Marvin Schwartz, *J. B. Hunt: The Long Haul to Success* (Fayetteville: University of Arkansas Press, 1992), 30-44; Michael H. Belzer, *Sweatshops on Wheels: Winners and Losers in Trucking Deregulation* (New York: Oxford University Press, 2000).

Works Cited

Archival Materials

- American Truck Historical Society, Kansas City, MO
 - Pamphlet Collection
- Bancroft Library, University of California–Berkeley, Berkeley, CA
 - Industrial Relations Interviews
- Chicago Historical Society, Chicago, IL
 - Bowman Dairy Company Records
 - Cornell University Library, Division of Rare and Manuscript Collections, Ithaca, NY
 - Food Processing Industry, New York State, Oral History Interviews
 - Harden Franklin Taylor Papers
- Country Music Hall of Fame Library, Nashville, TN
 - Dave Dudley File
 - Dick Curless File
 - Red Sovine File
 - Trucking Songs Subject File
 - Vic Willis File
- Finney County Historical Society, Garden City, KS
 - Beefpacking Subject File
 - Feedlots Subject File
- Hagley Museum and Library Archives, Wilmington, DE
 - Pennsylvania Railroad Company Records
- Kansas State Historical Society, Topeka, KS
 - Cattle Industry Clippings
 - Kansas Chamber of Commerce Records
 - Meat Industry Clippings
 - Motor Carrier Industry Clippings
- Lilly Library, Indiana University, Bloomington, IN
 - Clessie Lyle Cummins Records
- National Agricultural Library, Special Collections, Beltsville, MD
 - USDA History Collection
- National Archives II, College Park, MD
 - RG 16, Secretary of Agriculture Records
 - Entry 17, General Correspondence
 - RG 33, Federal Extension Service Records
 - Entry 1001 A, Annual Narrative and Statistical Reports
 - RG 136, Agricultural Marketing Service Records
 - Entry 2, Correspondence, 1956-77
 - Entry 11, Project Files, 1940-58
 - Entry 18, Correspondence of the Secretary of Agriculture and Assistant Secretaries of Agriculture Relating to the AMS, 1954
 - Entry 25, Dossiers of Materials on Suspended or Abandoned Marketing Agreements
 - Entry 26, Annual Reports on Federal Milk Orders
 - Entry 27, Milk Marketing and Planning Studies or Surveys
 - Entry 32, Records Relating to the Administration of the Packers and Stockyards Act of 1921, 1941-1967
 - Entry 40, Legal Desk File of Jerome N. Frank
 - Entry 42, Transportation and Facilities Research Division Subject Files
 - Entry 43, Transportation and Facilities Research Division, Project Files and Research Studies, 1947-1963
 - Entry 48, Office of the Administrator Correspondence Subject File, 1956-59

- Entry 52, Office of the Administrator Deputy Administrator's Correspondence
Subject File, 1940-58
- Entry 58, Fruit and Vegetable Branch, Subject-Numeric General Correspondence,
1942-44
- Entry 111, Subject-Numeric Correspondence Concerning Wartime Regulation of the
Livestock Industry, 1943-44
- RG 188, Office of Price Administration Records
 - Entry A81, Processed Fruit and Vegetable Subject File No. 2, 1944-46
 - Entry A95, Work Sheets on Costs of Birds Eye Frozen Foods, ca. 1942-44
 - Entry 476, Milk Orders, 1942-46
 - Entry R87, Records Relating to the Administration of the Fluid Milk Program, 1942-
45
- RG 202, National War Labor Board, Trucking Commission Records
 - Entry 303, General Correspondence, 1943-45
 - Entry 304, Outgoing Correspondence, Sep. 1943-Dec. 1945
 - Entry 305, Miscellaneous Records, 1942-45
 - Entry 313, Petitions for Review, 1943-45
 - Entry 316, Records of Adrian Schwartz
- National Archives Pacific Region, San Bruno, CA
 - RG 310, Agricultural Research Service Records
 - Accession 90-001, Records of the Western Regional Research Center, Central
Correspondence File
 - Accession 90-002, Records of the Western Regional Research Center, Central
Correspondence File
- Seabrook Educational and Cultural Center, Upper Deerfield Township, NJ
 - Artifacts File
 - Oral Histories of a Community
 - The Seabrooker Clippings File
- Smithsonian Institution, National Museum of American History, Archives Center, Washington,
DC
 - Industry on Parade Film Collection
 - N. W. Ayer Advertising Proofsheets
 - Warshaw Collection of Business Americana
- Texas Tech University, Southwest Collection, Lubbock, TX
 - Loyd M. Lanotte Papers
- University of Iowa Library, Special Collections, Iowa City, IA
 - Henry A. Wallace Papers
- University of Wisconsin Archives, University of Wisconsin–Madison, Madison, WI
 - Faculty Biographical Files
- University of Wisconsin-Milwaukee Area Research Center, Milwaukee, WI
 - Golden Guernsey Dairy Cooperative Records
- Wisconsin Historical Society, Madison, WI
 - Associated Milk Producers Records
 - Consolidated Badger Cooperative Records
 - Gavin McKerrow Records
 - International Brotherhood of Teamsters Records
 - International Brotherhood of Teamsters, Local 695 (Madison, WI) Records
 - International Harvester Company, Motor Truck Engineering and Product
Bulletins/Reports
 - International Harvester Company, Truck Circular Letters
 - John D. Black Papers
 - Percy Hardiman Oral History
 - Pure Milk Association Records
 - Wisconsin Dairies Cooperative Records

Published Government Documents

- Agnew, Donald B. *How Bulk Assembly Changes Milk Marketing Costs*. Washington: USDA, Agricultural Marketing Service, 1957.
- Atrops, E. P. and W. H. Redit. *Protective Services for Shipments of Carton Loads of California Oranges and Lemons*. Washington: USDA, Agricultural Marketing Service, 1962.
- Bitting, H. Wayne. *Factors Affecting Costs of Wholesale Distribution of Frozen Foods*. Washington: USDA, Agricultural Marketing Service, 1959.
- Boggs, Mildred, and Clyde Rasmussen. "Modern Food Processing." In USDA, *Yearbook of Agriculture, 1959*. Washington: GPO, 1959. Pp. 418-33.
- Bowser, Jr., William C. *Motortruck Operations of Farmer Cooperatives*. Washington: USDA, Farmer Cooperative Service, 1963.
- Bright, Imogene. *The Wage Factor in Retailing Meat in 4 Cities: A Study of Marketing of Agricultural Products*. Washington: USDA, Agricultural Marketing Service, 1957.
- Butz, William T. *Long-Distance Shipment of Market Milk*. Washington: USDA, Economic Research Service, 1964.
- Camp, T H. *Motortruck Operating Costs of Farmer Cooperatives*. Washington: USDA, Farmer Cooperative Service, 1964.
- Church, Donald E. and Margaret R. Purcell. "From Farms to First Market." In USDA, *Yearbook of Agriculture, 1954: Marketing*. Washington: GPO, 1954. Pp. 87-92.
- Congressional Record. 1935-1956*.
- Council on Wage and Price Stability. *The Value of Motor Carrier Operating Authorities*. Washington, DC: Council on Wage and Price Stability, 1977.
- Cowden, Joseph M. *Comparing Bulk and Can Milk Hauling Costs*. Washington: USDA, Farmer Cooperative Service, 1956.
- _____. *Farm-to-Plant Milk Hauling Practices of Dairy Cooperatives*. Washington: Farm Credit Administration, USDA, 1952.
- Dewey, Ralph L. "Regulations and Policies." In USDA, *Yearbook of Agriculture, 1954: Marketing*. Washington: GPO, 1954. Pp. 104-9.
- _____, and James C. Nelson. "The Transportation Problem of Agriculture." In USDA, *Yearbook of Agriculture, 1940: Farmers in a Changing World*. Washington: GPO, 1940. Pp. 720-39.
- DeWolfe, Mildred R. *For-Hire Carriers Hauling Exempt Agricultural Commodities: Nature and Extent of Operations*. Washington: USDA, Agricultural Marketing Service, 1963.
- Federal Coordinator of Transportation. *Hours, Wages, and Working Conditions in the Intercity Motor Transport Industries*. Washington: GPO, 1936.
- Federal Coordinator of Transportation. *Report of the Federal Coordinator of Transportation on Regulation of Transportation Agencies*. 73d Cong., 2d sess. Mar. 10, 1934. S. Doc. 152.
- Federal Trade Commission. *Report of the Federal Trade Commission on the Meat-Packing Industry, Part I*. Washington: GPO, 1919.
- Federal Trade Commission. *Report of the Federal Trade Commission on the Meat-Packing Industry, Part III*. Washington: GPO, 1919.
- Federal Trade Commission. *Report of the Federal Trade Commission on the Meat-Packing Industry, Part V*. Washington: GPO, 1920.
- Food Transportation and What It Costs Us*. Washington: USDA, Agricultural Marketing Service, 1956.
- Gerrity, Martin V, and Harold D. Johnson. *Motortruck Transportation of Freshly Killed Beef*. Washington: USDA, Agricultural Marketing Service, 1956.
- Gustafson, Ronald A. and Roy N. Van Arsdall. *Cattle Feeding in the United States*. Washington: USDA, Economic Research Service, 1970.
- Hinds, Russell H. Harold D. Johnson, and Robert C. Haldeman. *A Performance Test of Refrigerated Rail Cars Transporting Frozen Food*. Washington: USDA, Agricultural Marketing Service, 1957.
- Hoffman, L. A. P. P. Boles, and T. Q. Hutchinson. *Livestock Trucking Services: Quality, Adequacy, and Shipment Patterns*. Washington: USDA, Economic Research Service, 1975.
- Hotis, Ralph P. *Transporting and Handling Milk in Tanks*. Washington: USDA, 1931.

- Hudson, William J. and Don C. Leavens. "The Kinds and Uses of Carriers." In USDA, *Yearbook of Agriculture, 1954: Marketing*. Washington: GPO, 1954. Pp. 92-9.
- Hunter, Jr., John H. *The Role of Truck Brokers in the Movement of Exempt Agricultural Commodities*. Washington: USDA, Economic Research Service, 1962.
- Interstate Commerce Commission. *75th Annual Report of the Interstate Commerce Commission*. Washington: GPO, 1961.
- _____. *Coordination of Motor Transportation*. 72d Cong., 1st Sess. 1932. S. Doc. 43.
- _____. Docket MC-107669. Norman E. Harwood Contract Carrier Application. 47 *Motor Carrier Cases*, 597. Dec. 16, 1947.
- _____. Docket MC-C-968. Determination of Exempted Agricultural Commodities. 52 *Motor Carrier Cases*, 511. Apr. 13, 1951.
- _____. Ex Parte MC-43. Lease and Interchange of Vehicles. 52 *Motor Carrier Cases*, 675. May 8, 1951.
- _____. *Monthly Comment on Transportation Statistics*.
- _____. *The Independent Trucker: Nationwide Survey of Owner-Operators*. Washington, DC: ICC Bureau of Economics, 1978.
- Jesse, Edward V. "Links that Make up the Marketing Chain." In USDA, *Yearbook of Agriculture, 1982: Food from Farm to Table*. Washington: GPO, 1982. Pp. 137-44.
- Johnson, H. D. and P. L. Breakiron. *Protecting Perishable Foods during Transportation by Truck: Meats, Fruits, Melons, Vegetables, Poultry, Dairy Products*. Washington: USDA, Agricultural Marketing Service, 1956.
- Krause, Kenneth R. *Cattle Feeding, 1962-89: Location and Feedlot Size*. Washington: USDA, Economic Research Service, 1991.
- Kuenzli, David Warren. *The Cold-Wall Trailer Maintaining Frozen Food below Zero*. Washington, DC: USDA, Agricultural Marketing Service, 1962.
- Levine, Daniel B. *Consumers Appraise Canned and Frozen Foods, Their Packages and Labels in Atlanta, Kansas City, and San Francisco*. Washington: USDA, Agricultural Marketing Service, 1958.
- Mathews, Jr., et al. Kenneth H. *U.S. Beef Industry: Cattle Cycles, Price Spreads, and Packer Concentration*. Washington: USDA, Economic Research Service, 1999.
- Miklius, Walter. *Comparison of For-Hire Motor Carriers Operating under the Agricultural Exemption with Regulated Carriers*. Washington: USDA, Agricultural Marketing Service, 1966.
- Mixon, James A. and Harold D. Johnson. "Iceboxes on Wheels." In USDA, *Yearbook of Agriculture, 1954: Marketing*. Washington: GPO, 1954. Pp. 103-4.
- National Commission on Food Marketing. *Organization and Competition in the Livestock and Meat Industry*. Washington: GPO, 1966.
- Purcell, Margaret R. *Transportation of Florida Frozen Orange Juice Concentrate: A Case Study of Carrier Competition Induced by Dynamic Industry Growth*. Washington: USDA, 1955.
- Redit, Walter H. and Harold D. Johnson, James D. Hall, Randall Cubbedge, and J. Kaufman. *Transportation of Frozen Citrus Concentrate by Railroad and Motortruck from Florida to Northern Markets*. Washington: USDA, 1951.
- Russell, Judith, and Renee Fantin. *Studies in Food Rationing*. Washington: GPO, 1947.
- Samuels, J K. "The Right Product; The Right Place." In USDA, *Yearbook of Agriculture, 1960: Power to Produce*. Washington: GPO, 1960. Pp. 276-81.
- Snitzler, James R. and Robert J. Byrne. *Interstate Trucking of Frozen Fruits and Vegetables under Agricultural Exemption*. Washington: USDA, Agricultural Marketing Service, 1959.
- Sperling, Celia. *The Agricultural Exemption in Interstate Trucking: A Legislative and Judicial History*. Washington: USDA, Agricultural Marketing Service, 1957.
- _____. *The Agricultural Exemption in Interstate Trucking: Developments in 1957-58*. Washington: USDA, Agricultural Marketing Service, 1959.
- U.S. Bureau of the Census. *County Business Patterns, 1959*. Washington: GPO, 1961.
- _____. *1967 Census of Transportation, Vol. 3: Commodity and Special Statistics*. Washington: GPO, 1970.
- _____. *Historical Statistics of the United States: Colonial Times to 1970*. Washington: GPO, 1976.

- U.S. Congress. House. Committee on Agriculture. *Agricultural Research*. 79th Cong., 2d sess. Jul. 8, 1946. H. Rept. 2458.
- _____. *Agricultural Research. Hearings*. 79th Cong., 2d sess. Jun. 13-26, 1946.
- _____. *Amendment of Packers and Stockyards Act*. 85th Cong., 1st sess. 1957. H. Rept. 1048.
- _____. *Beef Ceiling Price Regulations. Hearings*. 82nd Cong., 1st sess. May 7, 16-19, 23-25, 1951.
- _____. *Development and Improvement of Terminal Marketing Facilities. Hearings*. 81st Cong., 2d sess. Jun. 6-9, 1950.
- _____. *Equalize Livestock Marketing Competition. Hearings*. 87th Cong., 1st sess. Aug. 23, 24, 1961.
- _____. *Equalize Livestock Marketing Competition. Hearings*. 88th Cong., 1st sess. May 14, Oct. 29, 1963.
- _____. *Marketing Agreements and Orders. Hearings*. 79th Cong., 2d sess. Apr. 3, May 3, 1946.
- _____. *Marketing Facilities for Perishable Agricultural Commodities*. 84th Cong., 1st sess. Jul. 30, 1955. H. Rept. 1602.
- _____. *Prohibit Feeding of Livestock by Certain Packers. Hearings*. 89th Cong., 2d sess. Apr. 21, 22, Oct. 5, 6, 1966.
- _____. *Regulation of Milk Production, Distribution, and Pricing. Hearings*. 73d Cong., 2d sess. May 3, 1934.
- U.S. Congress. House. Committee on Interstate and Foreign Commerce. *Interstate Commerce Act: Agricultural Exemptions. Hearings*. 85th Cong., 2d sess. Apr. 23-25, 1958.
- _____. *Regulation of Interstate Motor Carriers. Hearings*. 74th Cong., 1st sess. Feb. 19-22, 26-28, Mar. 1, 4, 5, 1935.
- _____. *Trip Leasing (Interstate Commerce Act). Hearings*. 83d Cong., 1st sess. Apr. 21-24, 30, May 7, 1953.
- _____. *Trip Leasing (Interstate Commerce Act). Hearings*. 84th Cong., 2d sess. May 16, 17, 21, 1956.
- U.S. Congress. House. Committee on Small Business. *Small Business Problems in the Marketing of Meat and Other Commodities: Part 3, Concentration Trends in the Meat Industry. Hearings*. 96th Cong., 1st sess. May 1, 2, 14, Jun. 4, 1979.
- _____. *Small Business Problems in the Marketing of Meat and Other Commodities: Part 4, Changing Structure of the Beef Packing Industry. Hearings*. 96th Cong., 1st sess. Jun. 25, 26, 1979.
- _____. *Small Business Problems in the Marketing of Meat and Other Commodities: Part 5, Anti-Competitive Practices in the Meat Industry. Hearings*. 96th Cong., 1st sess. Jul. 23, 24, 1979.
- U.S. Congress. House. Select Committee on Small Business. *Small Business Problems in Food Distribution*. 86th Cong., 2d sess. 1960. H. Rept. 2234.
- _____. *Small Business Problems in Food Distribution, Part I, Volume 2. Hearings*. 86th Cong., 1st sess. Jun. 24, 25, Jul. 7-9, 1959.
- U.S. Congress. Senate. Committee on Agriculture and Forestry. *Regulation of the Meat Industry. Hearings*. 85th Cong., 2d sess. Apr. 17, 1958.
- U.S. Congress. Senate. Committee on Commerce. *Study of Food Marketing, Part I. Hearings*. 88th Cong., 2d sess. Mar. 23-25, 1964.
- U.S. Congress. Senate. Committee on Commerce, Subcommittee on Surface Transportation. *Agricultural Cooperative Transportation Exemption. Hearings*. 90th Cong., 1st sess. Jul. 24-26, 1967.
- U.S. Congress. Senate. Committee on Interstate and Foreign Commerce. *Amending Interstate Commerce Act with Respect to Trip Leasing*. 84th Cong., 1st sess. 1955. S. Rept. 1271.
- _____. *Amendment to Interstate Commerce Act (Trip Leasing), Part 1. Hearings*. 83d Cong., 1st sess. Jul. 8-9, 1953.
- _____. *Regulation of Motor Carrier Transportation, Part 1. Hearings*. 72d Cong., 1st sess. Feb. 1-6, 8, 1932.
- _____. *Regulation of Motor Carrier Transportation, Part 2. Hearings*. 72d Cong., 1st sess. Mar. 3, 7-10, 14, 15, 1932.
- _____. *Regulation of Motor Carrier Transportation, Part 3. Hearings*. 72d Cong., 1st sess. Mar. 16, 17, 22-26, 1932.

- _____. *Regulation of Motor Carrier Transportation, Part 4. Hearings*. 72d Cong., 1st sess. Mar. 28-31, 1932.
- _____. *To Amend the Interstate Commerce Act, Part I: Motor Carrier Act of 1935, Hearings*. 74th Cong., 1st sess. Feb. 25-28, Mar. 1, 2, 4-6, 1935.
- U.S. Congress. Senate. Committee on the Judiciary. *Unfair Trade Practices in the Meat Industry. Hearings*. 85th Cong., 1st sess. May 1-3, 7-10, 15, 22, 1957.
- _____. *Concentration in American Industry*. Committee Print, 85th Cong., 1st sess. 1957.
- U.S. Congress. Temporary National Economic Committee. *Investigation of Concentration of Economic Power, Part 7: Milk Industry, Poultry Industry. Hearings*. 76th Cong., 1st sess. Mar. 9-11, May 1-3, 1939.
- U.S. Department of Agriculture. *Report of the Secretary of Agriculture*. Washington: GPO, 1941.
- _____. *Report of the Secretary of Agriculture*. Washington: GPO, 1943.
- _____. Agricultural Adjustment Administration, Division of Marketing and Marketing Agreements, Dairy Section. *A Survey of Milk Marketing in Milwaukee*. Washington: GPO, 1937.
- _____. Agricultural Marketing Service, Livestock Division. *Livestock, Meat, Wool, Market News: Weekly Summary and Statistics*, Jan. 31, 1940.
- _____. Agricultural Marketing Service, Packers and Stockyards Program. *Beef Pricing Report*. Washington: GPO, 1978.
- _____. Agricultural Research Administration. *Report of Activities under the Agricultural Marketing Act*. Washington: GPO, 1952.
- _____. Agricultural Research Administration. *Report of Activities under the Agricultural Marketing Act*. Washington: GPO, 1953.
- _____. Agricultural Research Service. *Protect Frozen Foods from Temperature Damage*. Albany: Western Utilization Research and Development Division, 1957.
- _____. Economic Research Service. *"Food Consumption (Per Capita) Data System."*, Available online at <<http://www.ers.usda.gov/data/foodconsumption/>>.
- _____. Production and Marketing Administration. *Transportation Activities: Semi-Annual Report of the Transportation Rates and Services Division*. Washington: USDA, Production and Marketing Administration, 1947.
- U.S. Department of Justice, Attorney General's Committee on Administrative Procedures. *Administrative Procedure in Government Agencies: Part 11, Administration of the Packers and Stockyards Act, Department of Agriculture*. 76th Cong. 3rd sess. 1940, S. Doc. 186.
- Ulrey, Ivon W. *The Economics of Farm Products Transportation*. Washington: USDA, Economic Research Service, 1969.
- Webb, Tarvin Flannis. *Improved Methods and Facilities for Commercial Cattle Feedlots*. Washington, DC: USDA, Agricultural Marketing Service, 1962.
- Winter, John C. "A Century of Progress." In USDA, *Yearbook of Agriculture, 1954: Marketing*. Washington: GPO, 1954. Pp. 99-103.
- _____. "Railroads, Trucks, and Ships." In USDA, *Yearbook of Agriculture, 1960: Power to Produce*. Washington: GPO, 1960. Pp. 297-307.
- Yohe, H. S. *Operating a Cooperative Motor Truck Route*. Washington: USDA, 1919.

Periodical Literature

- Business Week*, 1930-1986
Milwaukee Journal, 1933-1934
New York Times, 1922-2002
Wall Street Journal, 1930-1988
Milk Dealer, 1944-1966
Milk Hauler and Food Transporter, 1972-1974
Modern Milk Hauler, 1960-1969
Overdrive, 1961-1980
Quick Frozen Foods, 1938-1965
- "'5 Major Things to Watch' in Every Livestock Haul." *Kansas Transporter* (Feb. 1948): 14, 21.
 "A Big Union that's Haunted by Its Own Success." *U.S. News and World Report*. Aug. 8, 1977. Pp. 75-6.
 "A Man's on His Own on the Highway." *Open Road and the Professional Driver*. Jun. 1967. P. 5.
 Abdou, Aly A. "Economic Aspects of Motor Transportation in Marketing Livestock." *Journal of Farm Economics* 39 (Nov. 1957): 958-65.
 "Adequate Rates Major Problem Facing Bull Haulers." *Ag Trucking News*. Jun. 1973. P. 32.
 Advertisement for Birds Eye, "Why Should Vegetables Be the 'Quiet Corner' of Your Plate?" *Ladies Home Journal*. Nov. 1963. P. 38.
 Advertisement for Prime Froz-n, "Your Double Assurance..They Have to Be GOOD!" *Frozen Food Factbook* (1954): 1.
 Advertisement for Wagner Electric Corporation, "5 Ways that Tachographs Can Improve Your Fleet Operation." *Power Wagon* (Mar. 1956): 9.
 "Agent for the Farmer." *Washington Post*. Jul. 5, 1938. P. 6.
 Albert, Douglas. "Truck-Trailer Refrigeration." *Refrigerating Engineering* (Jan. 1948): 31-5.
 "Amarillo's IBP: Where Beef Is King." *Ag Trucking News*. Mar. 1977. P. 18.
 Anderson, Ray. "Frozen Milk: Will It Sell?" *Farm Journal*. Dec. 1954. P. 37, 130.
 "Are Chain Stores Hurting Beef Prices?" *Farm Journal*. Feb. 1957. P. 48.
 "Bad Old Days." *Time*. Aug. 9, 1982. Pp. 47-8.
 Baker, Jr., Forrest S. "Efficiency in Transportation Packaging." *Journal of Farm Economics*. 46 (Dec. 1964): 1290-6.
 Ball, Charles E. "The New Beef Breeds Are Rolling." *Farm Journal*. Nov. 1956. Pp. 62-5.
 Barth, Alan. "Only the Cows Are Contented." *Nation*. Jan. 1, 1938. Pp. 744-5.
 Barton, Bruce. "You Don't Altogether Like Your Job!" *American Magazine*. May 1921. Pp. 34-5, 114-18.
 Bay, Ovid, and John Rohlf. "Beefmen Face up to Consumer Whims." *Farm Journal*. Feb. 1958. P. 52.
 "Beef May Be Cheaper, But How Much Will We Get?" *Saturday Evening Post*. Jun. 23, 1951. Pp. 10-2.
 "The Beef Price Control Program." *Consumer Reports*. Jul. 1951. Pp. 321-4.
 "Beef Sales Boom and So Do Prices." *U.S. News and World Report*. Jun. 9, 1969. Pp. 68-9.
 "Beefs about Beef." *Newsweek*. Jun. 23, 1947. Pp. 68-9.
 "The Big Beef." *Time*. Jun. 18, 1951. P. 91.
 "Biggest Vegetable Factory on Earth." *Life*. Jan. 1955. Pp. 40-3.
 "Bill Graves Began with One Truck." *Kansas Transporter* (Jan. 1947): 3, 15.
 "Bill Graves Heads Kansas Truckers." *Power Wagon* (Feb. 1947): 28.
 "Bill Mack: Radio Friend of the Trucker." *Open Road and the Professional Driver*. Jul. 1969. P. 18.
 Black, Guy. "Agricultural Interest in the Regulation of Truck Transportation." *Journal of Farm Economics*. 37 (Aug. 1955): 439-51.
 Bonventre, et al. Peter. "Truckers in Revolt." *Newsweek*. Jun. 25, 1979. P. 45.
 Boyle, James Ernest. "Battle of Milk." *Saturday Evening Post*. Nov. 13, 1937. Pp. 18-9+.
 Braun, Dick. "New Feed Additive May Cut Beef Costs." *Farm Journal*. Jun. 1960. P. 47.

Briggs, Jean A. "Put that Hammer Down, Good Buddy!" *Forbes*. Sep. 1, 1980. Pp. 118-20.

Bureau of Labor Statistics. "Over-the-Road Truckdrivers." *Occupational Outlook Handbook*. 1255, 4th Edition (1959): 417-21.

"Buying Beef: What Pushed Prices Up?" *Consumer Reports*. Sep. 1974. Pp. 656-8.

"C&W Pulse Published for 24 U.S. Markets." *CMA Close-Up* (Sep. 1965): 1.

"Carlisle Moves Fat and Feeder Cattle." *Ag Trucking News*. Mar. 1977. P. 68.

"Challenge for Dairymen." *Time*. Mar. 30, 1953. P. 15.

Christenson, Carroll Lawrence. "Employment and Earnings in Commercial Milk Distribution, 1929-34." *Monthly Labor Review*. 43 (Jul. 1936): 139-49.

Clarke, Owen. "The Motor Carrier Act." *Power Wagon* (Sep. 1957): 13-5.

Coates, Paul L, and Arnold Nicholson. "I Say Milk Costs Too Much." *Saturday Evening Post*. Jan. 1, 1949. Pp. 16-7, 67-8.

"Concentrated Milk." *Time*. Mar. 26, 1951. Pp. 92-3.

Constable, Anne. "In Georgia: Footnotes from a Trucker's Heaven." *Time*. Feb. 19, 1979. Pp. 6-7.

Cook, James. "Those Simple Barefoot Boys from Iowa Beef." *Forbes*. Jun. 22, 1981. Pp. 33-7.

"Country Charts." *Cash Box*. Jan. 29, 1966. Pp. 52-3.

Cowan, H. Bronson. "Municipally Owned and Operated Milk Plant." *American City*. Jan. 1940. Pp. 47-8.

Crews, Harry. "The Trucker Militant." *Esquire*. Aug. 1977. Pp. 82-4, 146-9.

Crowther, Don Q, and Mortier W. LaFever. "Wages and Hours of Labor in the Intercity Motor Bus and Truck Transportation Industries, July 1933." *Monthly Labor Review*. 38 (Jun. 1934): 1415-40.

"Dairy Prices." *New Republic*. Sep. 16, 1946. P. 309.

Davidson, B. D. "Refrigerated Motor Truck Service for Frozen Foods." *Ice and Refrigeration* (Jan. 1946): 50, 73.

Deen, Dixie. "'Diesel on My Tail'—Jim and Jesse." *Music City News* (May 1967): 6, 8, 10.

_____. "Don Pierce of Starday." *Music City News* (Jan. 1967): 8-9, 24.

_____. "Red Sovine: 'I Didn't Jump the Fence'." *Music City News* (Jun. 1967): 3-4.

_____. "Six Days on the Road Puts Ravin' Dave Dudley on Country Music Map." *Music City News* (Jul. 1966): 11, 20.

Dimmick, Thomas B. "Trends in Traffic Volume, Vehicle Types, and Weights." *Public Roads* (Dec. 1953): 240.

Doughty, Sterling P. "'Task Force 1957' Is Answer to Industry's Handling Problems." *Frozen Food Factbook* (1958): 13.

Duewer, Lawrence A. "Cutting Beef-Handling Costs." *National Food Review* (Fall 1985): 1-3.

Edmonson, J. E, and J. H. Gholson. "Bulk Pick-Up and the Hauler." *Milk Plant Monthly* (May 1955): 26-7.

Egger, George. "Quality Is the Key to Further Expansion of Frozen Food Sales." *Frozen Food Factbook* (1957): 29.

"End Forced Beef Grading." *Science News Letter*. Feb. 28, 1953. P. 134.

"Even Better Beef Hormones?" *Farm Journal*. May 1957. Pp. 39-42.

"Exciting New Beef Feed Additive." *Farm Journal*. Apr. 1958. Pp. 12-14.

Ezekiel, Mordecai. "The Cobweb Theorem." *Quarterly Journal of Economics*, 52 (Feb. 1938): 255-80.

Farmer, Richard N. Letter to the Editor. *Forbes*. Dec. 15, 1964. Pp. 6, 52.

_____. "The Case for Unregulated Truck Transportation." *Journal of Farm Economics*. 46 (May 1964): 398-409.

"Farm-to-Market Carriers Wage War on Violators." *Kansas Transporter* (Aug. 1950): 20-1.

Finneran, E. J. "From Cow to Kitchen." *Nation's Business*. Jun. 1937. Pp. 24-6, 169-72.

Fishel, V. C. "Ground-Water Resources of Kansas." *Transactions of the Kansas Academy of Science*. 50 (Sep. 1947): 105-14.

Flynn, John T. "The Milk Monopoly." *New Republic*. Apr. 5, 1939. P. 250.

"Fresh Meat on the Dinner Table a New Delicacy since Truck Transportation." *Kansas Transporter* (Nov. 1950): 14-5.

"From One Secondhand Truck to a Giant Truckline." *Nation's Business*. Jul. 1978. Pp. 40-6.

"Frozen Foods: Interim Report." *Fortune*. Aug. 1946. Pp. 104-9, 178-82.

"Frozen Foods: Slow Start to Big Boom." *Chain Store Age* (May 1954): 95-7.

Gardner, Mona. "The Assembly-Line Farmer." *Reader's Digest*. Jan. 1944. Pp. 95-7.

Gifford, C. W. "Bulk Milk Tanks, Dairymen Like 'Em." *Farm Journal*. Jun. 1953. Pp. 36-7, 127.

"The Gold Guitars." *Newsweek*. Apr. 4, 1966. Pp. 96-7.

Graf, Truman. "Bulk Tanks Bring Long Term Benefits." *Wisconsin Agriculturist and Farmer*. (Mar. 7, 1959).

Green, Larry. "Efforts Grow to Save 'Sixth Great Lake'." *Los Angeles Times*. Oct. 10, 1984. P. 1, 15.

Guise, Byron. "Men on the Road." *Kansas Transporter* (Oct. 1972): 12.

Haddock, George. "Frozen Foods: Billion Dollar Industry." *Nation's Business*. Jun. 1954. Pp. 60-2.

"Handle Stock Properly to Reduce Bruising." *Kansas Transporter* (Jul. 1954): 23.

Hanson, D. "Less Work, More Profits with Milk Tanks." *Successful Farming*. Aug. 1952. Pp. 46-7, 76, 78, 80-1.

Harden, Blaine. "Big John—Truckers' Favorite DJ." *Washington Post*. Dec. 1, 1979. P. 1, 4.

Harris, David. "The Truckers Go to Washington." *Rolling Stone*. Apr. 25, 1974. Pp. 48-56.

Harvey, John. "What Good Are Ports of Entry?" *Kansas Farmer*. Jan. 20, 1951. P. 10.

Harwood, Michael. "America with Its Ears On." *New York Times Magazine*. Apr. 25, 1976. P. 28, 60, 65, 68.

"Hauling as Many as 2900 Cattle a Day." *Kansas Transporter* (Apr. 1965): 4.

Heerdt, Tim. "Hauling Livestock, A Boy's Perspective." *Wheels of Time*. Mar. 2004. Pp. 24-9.

Heffron, Wayne. "Farm-to-Market." *Kansas Transporter* (Nov. 1951): 26.

Hobbs, Donna. "Business Surrounded by Atmosphere of the 'Old West'." *Kansas Transporter* (Jul. 1962): 6-8.

_____. "It All Started with a Model T." *Kansas Transporter* (Sep. 1962): 6-7.

"Hold Your Milk!" *Time*. Sep. 14, 1936. P. 73.

Hopkins, Jacque V. "Too Much Milk." *Nation*. Sep. 8, 1956. Pp. 198-200.

"Hormone and Antibiotic Gives More, Better Beef." *Science News Letter*. Jun. 4, 1955. P. 360.

"Housewives' Beef." *Time*. Jun. 13, 1969. P. 94.

"How Safeway Stores Uses Company-Produced Driver Training Aids." *Refrigerated Transporter* (Jul. 1967): 23-4.

Humphrey, H. J. "Temperatures for Frozen Foods." *Ice and Refrigeration* (Aug. 1951): 52-8.

Hurst, Jack. "Red Sovine: Teller of Sad Tales." *Macon (Georgia) Telegraph*. Aug. 2, 1976. P. 5B.

"Ickes and the Trucks." *Motor Carrier*, (Dec. 1939): 4-5.

"Imitation Insures Success." *Music City News* (Sep. 1965): 30.

Interstate Commerce Commission. "Lease and Interchange of Vehicles: Motor Carriers: Ex parte No. MC-43." *Federal Register*. Jan. 27, 1948. Pp. 369-72.

"Interstate Trucking Grows with Liberalization." *Power Wagon* (May 1956): 4.

Jackson, Brooks. "Still Flowing: Milk Money." *New Republic*. Aug. 10, 1974. Pp. 11-12.

Jarrell, A. N. "Milk-Dealer Industry: Earnings in Late 1951 and Early 1952." *Monthly Labor Review*. 75 (Oct. 1952): 422-3.

Keilholz, F. J. "Put Down that Milk Can!" *Country Gentleman*. Dec. 1954. Pp. 36-7, 58.

"KGBS Honors Safe Trucker." *Music City News* (Jun. 1968): 11.

"Labor Aspects of the Chicago Milk Industry." *Monthly Labor Review*. 54 (Jun. 1942): 1283-1309.

Lamb, F. Gilbert. "Let's Stress Quality in Frozen Foods." *Frozen Food Factbook* (1957): 13, 51, 53.

"Let 'em Drink Grade A." *Fortune*. Nov. 1939. Pp. 82-4, 128-36.

"Let Them Eat Cake." *Fortune*. Oct. 1934. Pp. 68-75, 122-37.

Lewis, George McKoy. "The Cattle and Beef Industry: Beef Grading and Related Problems." *Vital Speeches of the Day*. Jan. 1, 1961. Pp. 189-92.

Lichtenstein, Grace. "Rocky Mountain High." *New York Times Magazine*. Dec. 28, 1975. Pp. 14-16.

"Livestock Carriers Die in Accident." *Kansas Transporter* (Oct. 1956): 29.

"Livestock Feeders Pass Important Resolution." *Motor Carrier* (May 1940): 11.

Lloyd, Starr H. "Food Distribution: A Study in Beef." *Transportation and Distribution Management*. 12 (Sep. 1972): 21-4.

Lubin, Charles W. "It's Easy to Get Your Price for Quality." *Frozen Food Factbook* (1958): 27.

Lynch, John T, and Thomas B. Dimmick. "Amount and Characteristics of Trucking on Rural Roads." *Public Roads* (Jul. 1943): 213-46.

- Mack, Merrill J. "Status of Pasteurization of Milk and Milk Products." *American Journal of Public Health*. 29, supplement (Feb. 1939): 36-41.
- Maher, Ray E. "Moving Beef on the Hoof Is Horadam's Job." *Power Wagon* (May 1948): 22-3.
- Malena, Dave, and Richard Krumme. "Beef Confinement: The Controversy." *Successful Farming*. May 1970. Pp. 41-5.
- Malena, Dave. "Just Ahead—A Turning Point in the Beef Industry." *Successful Farming*. Apr. 1969. Pp. 32-3.
- Maund, Alfred. "Peons on Wheels: The Long-Haul Trucker." *Nation*. Nov. 14, 1953. Pp. 393-4.
- Maurer, Harry. "Organizing the 'Gypsies'." *Nation*. Jan. 11, 1975. Pp. 10-15.
- Mayer, Lawrence A. "Monfort Is a 'One-Company Industry'." *Fortune*. Jan. 1973. Pp. 90-5, 156-60.
- McClusky, Thorp. "Truck Drivers Are Human, Too." *Christian Science Monitor Magazine*. Aug. 9, 1947. P. 3, 13.
- McCune, Wesley. "Why Milk Costs So Much." *Harper's*. May 1942. Pp. 604-11.
- McPhee, John. "A Fleet of One." *New Yorker*. Feb. 17, 2003. Pp. 148-63.
- "Meat Counter Miseries: As Food Costs Soar, Consumers Are Furious." *Life*. Apr. 14, 1972. Pp. 32B-38.
- "Meat Packing Industry Blazed Early Trails to Prosperity." *Kansas Business* (Nov. 1937): 6-7, 23-4.
- Meryman, Harold T. "Mechanics of Freezing in Living Cells and Tissues." *Science*. 124 (Sep. 1956): 515-21.
- "Milk in Chicago." *Fortune*. Nov. 1939. Pp. 80-1, 124-8.
- "Milk in Paper." *Newsweek*. Nov. 20, 1939. Pp. 55-7.
- "Milk Marketing." *Consumer Reports*. Aug. 1955. Pp. 381-3.
- "Milk Money." *New Republic*. Feb. 12, 1972. P. 7.
- "Milk Pricing: Housewives Pay for Outmoded Controls." *Time*. Dec. 13, 1954. P. 88.
- "The Milk Racket." *Nation*. May 6, 1939. Pp. 517-8.
- "Milk Strike." *Newsweek*. Aug. 28, 1939. P. 38.
- "Milk: Why Is the Price So High?" *Consumer Reports*. Jan. 1974. Pp. 77-80.
- Miller, Bill, and Charles Henry. "What Happens When the Big Packer Comes to Your Town?" *Successful Farming*. May 1980. Pp. 18-21.
- "More Beef to the Acre." *Kansas Farmer*. Feb. 1952. P. 6, 32.
- "More Members, More Plants, More Money for Members in 1947." *Pure Milk News* (Mar. 1948): 6-7.
- Morgenthau, Tom, and John Walcott, Thomas M. DeFrank, Lea Donosky, and Holly Morris. "The Energy Plague." *Newsweek*. Jul. 2, 1979. Pp. 22-24.
- Mortenson, W. P. "Milk Distribution as a Public Utility." *American City*. Apr. 1940. P. 131.
- "Mounkes Truck Line Builds Outstanding Safety Record." *Kansas Transporter* (Mar. 1970): 10.
- "'Municipal' Cows." *Milwaukee Milk Producer* (Feb. 1934): 2.
- "Municipal Owned Dairy Opposed by Producers." *Milwaukee Milk Producer* (Feb. 1934): 1, 3.
- Nichols, Lewis. "The Ubiquitous Juke Box." *New York Times Magazine*. Oct. 5, 1941. P. 22.
- Nickerson, Jane. "Fresh Meat in Packages." *New York Times Magazine*. Aug. 15, 1948. Pp. 32-3.
- "No Milk Today." *New Republic*. Aug. 2, 1948. P. 8.
- "One Hellacious Uproar." *Time*. Jul. 2, 1979. Pp. 22-7.
- "The 'Ordinary' \$125-Billion Market." *Fortune*. Sep. 1959. Pp. 132-5.
- "Per Capita Consumption Comparison." *Frozen Food Factbook* (1957): 91.
- "Plan to Solve Milk Problem." *Science News Letter*. Apr. 3, 1943. P. 218.
- "Pre-Cooling of Perishables." *Power Wagon* (Sep. 1948): 20.
- "Private Fleet Cuts Delivery Time, Cargo Losses for Monfort of Colorado." *Ag Trucking News*. Sep. 1973. P. 6.
- Quinn, Doris. "A New Breed." *Kansas Transporter* (Jun. 1961): 4-5.
- _____. "In the Shadow of a Steer." *Kansas Transporter* (Sep. 1960): 6-7.
- _____. "Pappy Is Happy about Being a Bull Hauler." *Kansas Transporter* (Dec. 1959): 6-7.
- _____. "Portrait of a Trucker." *Kansas Transporter* (Nov. 1959): 12-3.
- Raskin, A. H. "Why They Cheer for Hoffa." *New York Times Magazine*. Nov. 9, 1958. Pp. 15, 77-9.
- Ratner, Milton D. "The Role of Truck Transportation in Marketing Pre-Packaged Meats." *Refrigerated Transporter* (Feb. 1969): 14-7.

Raymond, Neville. "Hitch Your Truck to a Country Star." *Country Music*. Sep. 1972. Pp. 179-82.

"Reach-In Case Sells More Frozen Foods." *Progressive Grocer* (Dec. 1957): 66.

Reeder, Norm. "NFO Milk Contracts Worry Big Co-Ops." *Farm Journal*. Feb. 1970. P. 71.

_____. "Can the Super Co-Ops Crash These Roadblocks?" *Farm Journal*. May 1971. P. 21, 32.

_____. "Operating Co-Ops, Let's Unite Now!" *Farm Journal*. Jan. 1970. P. 29, 61.

Reiman, Ray. "Major Changes Here in Beef Cattle Trends." *Successful Farming*. Jun. 1963. P. 25.

Reneau, A. L. "Frozen Food Transportation and Distribution." *Ice and Refrigeration* (Oct. 1949): 17-9, 53.

Robson, R. Thayne. "The Trucking Industry." *Monthly Labor Review*. 82 (May 1959): 547-51.

Rose, Joe, and A. L. Rose. "Trucking in New Mexico in the Late 1940s." *Wheels of Time*. Mar. 2004. Pp. 30-1.

Rosen, Sherwin, Kevin M. Murphy, and Jose A. Scheinkman. "Cattle Cycles." *Journal of Political Economy*. 102 (Jan. 1994): 468-92.

"Rough Riders." *Forbes*. Jun. 15, 1974. Pp. 65-6.

"Routes (And How to Acquire Them)." *Forbes*. May 15, 1977. Pp. 68-70.

Rowen, James. "Greyhound Steak, Sauce Oppenheimer." *Nation*. Jun. 5, 1972. Pp. 714-9.

Sandoz, Hubert F. "It Costs Less to Pack Frozen Foods than the Equivalent Canned Goods!" *Frozen Food Factbook* (1954): 29-31.

Schmitt, H. P. "Status of the AFDOUS Zero Degree Code." *Refrigerated Transporter* (Aug. 1964): 11.

Seabrook, John. "The Spinach King." *New Yorker*. Feb. 20, 1995. Pp. 222-35.

Searle, Lee. "Cattle Marketing: Cycles Still Control the Booms and Busts." *Successful Farming*. Aug. 1975. Pp. 22-3.

Shalett, Sidney. "Warehousemen Chill Everything but Ideas." *Nation's Business*. Feb. 1954. Pp. 32-3, 70-3.

Smutter, Wessel. "Glamour Boys of the Highway." *Saturday Evening Post*. Feb. 23, 1946. Pp. 14-15, 58-62.

Sprague, James I. "Big Western Feed Lots, What You Can Learn from Them." *Successful Farming*. Feb. 1963. Pp. 64-5, 111.

"Spreading Toll of Truckers' Strike." *U.S. News and World Report*. Jul. 2, 1979. P. 4.

"Starday's Unique Concept: A Country Label Exclusively." *Billboard* (Nov. 2, 1963): 73.

"Steers that Finish Fast." *Farm Journal*. Mar. 1958. Pp. 68L-68M.

Surratt, Brian. "Behind the Wheel." *Wheels of Time*. Mar. 2004. Pp. 34-8.

Swan, Emerson W. "'Air Ride' Suspension Gives Us Better Cargo Protection." *Power Wagon* (Apr. 1957): 24.

Thomsen, F. L. "A Critical Examination of Marketing Research." *Journal of Farm Economics*. 27 (Nov. 1945): 947-62.

"Transportation Holds Line on Food Costs." *Kansas Transporter* (Oct. 1966): 27.

"Triumph of Logic." *Forbes*. Dec. 15, 1968. Pp. 48-51.

"Truck Rodeo." *Motor Carrier* (Aug. 1940): 7.

"Truckers Everywhere Love Country Music." *Open Road and the Professional Driver*. Sep. 1978. Pp. 30-1.

"Trucker's Wife Shares Long-Haul Distance Driving." *Power Wagon* (Mar. 1955): 14.

"Truckin' with Overdrive." *Time*. Sep. 1, 1975. Pp. 56-7.

"Trucking Exec's Challenge Spurred 'Refrigerator on Wheels.'" *Transport Topics* (Jul. 5, 1997).

"Trucking's High Wages, Benefits Justify Exemption from Overtime." *Kansas Transporter* (Mar. 1964): 15.

"The Ups and Downs of Concentrated Milk." *Fortune*. Sep. 1951. P. 164.

"U. S. Frozen Food Grades." *Frozen Food Factbook* (1954): 69.

Van Arsdel, W. B. "The Time-Temperature Tolerance of Frozen Foods: I. Introduction—The Problem and the Attack." *Food Technology* (Jan. 1957): 28-33.

Walsh, W. M. "A Message from the President." *Annual Yearbook of Frozen Food Distribution* (1949): 9.

"Wanted: Zero Degree Frozen Food Transports." *Trailer/Body Builders* (Dec. 1959): 6.

"Warehouses and Distribution Centers." *Architectural Record*. Dec. 1966. Pp. 121-5.

"Watchman in the Cab." *Power Wagon* (Apr. 1956): 18-9, 47.

Wells, O. V. and John D. Black, Theodore W. Schultz, Frank J. Welch, Thomas K. Cowden, Nathan L. Whetten, Paul Appleby, H. C. Taylor, Howard R. Tolley, and Raymond J. Penn. "The Fragmentation of the BAE." *Journal of Farm Economics*. 36 (Feb. 1954): 1-21.

"When Dairy Farmers Went on Strike." *U.S. News and World Report*. Apr. 3, 1967. P. 53.

"When Truckers Threatened the Nation." *U.S. News and World Report*. Jun. 25, 1979. P. 10.

"Who Are the Teamsters? From Groceries to Girders, They Haul Everything." *U.S. News and World Report*. Mar. 8, 1957. Pp. 134-7.

"Who Gets the Money for Beef." *U.S. News and World Report*. Feb. 17, 1956. Pp. 36-40.

"Who Gets What You Spend for Food? Farmer's Share Shrinks, Labor Takes a Bigger Slice." *U.S. News and World Report*. Mar. 9, 1956. Pp. 72-3.

"Whole Milk in Cans." *Fortune*. Oct. 1952. P. 87.

"Who's Getting All the Beef?" *U.S. News and World Report*. Oct. 5, 1951. P. 16.

"Why Frozen Foods Are Climbing." *Chain Store Age* (Mar. 1956): 138.

"Wilkinson, Robert A." "Wanted: More Milk." *Atlantic*. Jan. 1941. Pp. 64-70.

"Will a Bulk Tank Pay?" *Farm Journal*. Oct. 1955. Pp. 60-2.

Williams, Willard F. "Structural Changes in the Meat Wholesaling Industry." *Journal of Farm Economics*. 40 (May 1958): 315-29.

Wilson, E. "Milk Strike." *New Republic*. Sep. 13, 1933. Pp. 122-5.

"Winrock Farms." *Ag Trucking News*. May 1973. Pp. 14-5.

Woehl, Louis. "More Attention Should Be Paid to Trucking Equipment." *Frozen Food Factbook* (1957): 23.

Woodward, Kenneth L, Peter S. Greenberg, and Susan Malsch. "The Trucker Mystique." *Newsweek*. Jan. 26, 1976. Pp. 44-5, 65.

Wright, Frank. "Land of Milk and Money." *Nation*. Dec. 20, 1971. Pp. 657-9.

"The Youngest Giant." *Fortune*. May 15, 1969. P. 293.

Music

Anglin, Jim. "Truck Driver's Sweetheart." Performed by Karl and Harty. Okeh 6622.

Art Gibson. "I'm a Truck Driving Man." Mercury 6065.

Baham, Roy. "Rollin' Rig." Performed by Dave Dudley. United Artists / Rice RR-5064.

Bentley, Clark, and Lawton Williams. "Asphalt Cowboy." Performed by Sleepy LaBeef. Plantation 66.

Buford, Abner. "Long White Line." Performed by Charlie Moore and Bill Napier. King 45-6004.

Collins, Tommy. "Roll, Truck, Roll." Performed by Red Simpson, Capitol ST 2468.

Daffan, Ted. "Truck Driver's Blues." Performed by Cliff Bruner and His Boys. Decca 5725.

Deen, Dixie, and Ray King. "Truck Driving Son of a Gun." Performed by Dave Dudley. Mercury 72442.

Fagan, Jim. "Diesel on My Tail." Performed by Jim and Jesse McReynolds and the Virginia Boys. Epic 10138.

Fell, Terry. "Truck Driving Man." RCA Victor "X" 0010.

Fields, Charles, James Kirchstein, and Donald Riis. "Big Rig Rollin' Man." Performed by Johnny Dollar, Chart Records 1057.

Fulkerson, Daniel Blaine. "A Tombstone Every Mile." Performed by Dick Curless, Allagash Records 101.

Grace, Earl, and Tommy Hill. "King of the Open Road." Performed by Red Sovine, Starday SLP 341.

Green, Earl, and John William Greene. "Give Me 40 Acres (To Turn this Rig Around)." Performed by the Willis Brothers, Starday 681.

Green, Earl, and Carl and Earl Montgomery. "Six Days Awaiting." Performed by Kay Adams, Tower ST 5033.

Green, Earl, and Carl Montgomery. "Six Days on the Road." Performed by Dave Dudley. Golden Wing GW3020.

Haggard, Merle. "Movin' On." Capitol 4085.

_____. "White Line Fever." Capitol ST 384.

Haynes, Walter, and Hank Mills. "Girl on the Billboard." Performed by Del Reeves. United Artists 824.

Hill, Tommy, and Red Sovine. "Giddy-Up Go." Performed by Red Sovine. Starday 737.
 Horton, Vaughan. "Big Wheel Cannonball." Performed by Dick Curless. Capitol 2780.
 Horton, Johnny, and Tillman Franks. "I'm Coming Home." Performed by Johnny Horton. Columbia 40813.
 Jay, Penny, and Robert Buddy Wilson. "Widow Maker." Performed by Jimmy Martin. Decca 74536.
 Mack, Geoff. "I've Been Everywhere." Performed by Asleep at the Wheel. United Artists UA-LA038-F.
 Martin, Cal. "Diesel Smoke, Dangerous Curves." Performed by Doye O'Dell. Intro Records RR-1867.
 Milolen (The Milo Twins), Edward and Edwin. "Truck Driver's Boogie." Capitol 40138.
 Moore, Charlie, and Bill Napier. "Hot Rod Kids and Women Drivers." King 936.
 Moore, Charlie, and Bill Napier. "Truck Driver's Queen." King 936.
 Nesbitt, Jim. "Truck Drivin' Cat with Nine Wives." Chart Records 1018.
 Reinhart, Dick. "Truck Driver's Coffee Stop." Performed by Jimmy Wakely. Decca 5995.
 Roberts, Chris Darrell, Jim Thornton, and Scott Turner. "Little Pink Mack." Performed by Kay Adams. Tower 269.
 Robison, Fabor. "Highway Man." Performed by Curtis Leach. Fabor Records 135.
 Simpson, Red. *The Man behind the Badge*. Capitol ST 2569.
 Sovine, Red, and Gordon Clifford Grills. "Woman behind the Man behind the Wheel." Performed by Red Sovine. Starday Gusto 169.
 Valentine, Robert, and Bobby Braddock. "Gear Bustin' Sort of a Feller." Performed by Bobby Braddock. MGM K13658.
 The Willis Brothers. *Give Me 40 Acres (To Turn This Rig Around)*. Starday SLP-323.
 Willis, Guy, and William Brown Ellis IV. "Wheels A-Turning." Performed by the Willis Brothers. Starday / Nashville NLP-2052.
 Wilson, Coleman. "Passing Zone Blues." King 45-5512.

Films

American Standoff. Directed by Kristi Jacobsen. 95 min. HBO Films, 2002. Videocassette.
Convoy. Directed by Sam Peckinpah. 110 min. EMI Films, 1978. Videocassette.
Duel. Directed by Steven Spielberg. 90 min. Universal, 1971. Videocassette.
Modern Times. Directed by Charles Chaplin. 110 min. EMI Films, 1936. Videocassette.
Smokey and the Bandit. Directed by Hal Needham. 97 min. Universal Studios, 1977. Digital Video Disc.
They Drive by Night. Directed by Raoul Walsh. 97 min. Warner Bros. 1940. Digital Video Disc.

Other Primary Documents

American Trucking Associations. *American Trucking Trends*. Washington: American Trucking Associations, 1947-1971.
 Ashby, R. C. *Livestock Truckage Rates in Illinois with a Comparison of Marketing Expense by Truck and by Rail*, *Bulletin* 342. Urbana: Illinois Agricultural Experiment Station, 1930.
 Beal, George Max, and Henry H. Bakken. *Fluid Milk Marketing*. Madison: Mimir Publishers, 1956.
 Benson, Ezra Taft. *Freedom to Farm*. New York: Doubleday, 1960.
 Bingham, John E. C. Richard Kramlich, and John D. Leland, Jr., *Are Frozen Foods Profitable for Supermarkets?*. Boston: Graduate School of Business Administration, Harvard University, 1960.
 Black, Guy. *Long-Haul Truck Transportation of California Fresh Fruits and Vegetables*. Berkeley: University of California Agricultural Experiment Station, 1955.
 Black, John D. *The Dairy Industry and the AAA*. Washington: Brookings Institution, 1935.
 Brookover, Jr., Earl, and Ty Brookover. Interview by the Author. Mar. 23, 2004, Garden City, KS.
 Bryan, William Jennings. *The Cross of Gold: Speech Delivered before the National Democratic Convention at Chicago, July 9, 1896*. Lincoln: University of Nebraska Press, 1996.
 Carlton, Harry. *The Frozen Food Industry*. Knoxville: University of Tennessee Press, 1941.
 Cassels, John M. *A Study of Fluid Milk Prices*. Cambridge, MA: Harvard University Press, 1937.

- Cook, Hugh L, Harlow W. Halvorson, and R. Wayne Robinson. *Costs and Efficiency of Wholesale Milk Distribution in Milwaukee*. Madison: University of Wisconsin Agricultural Experiment Station, 1956.
- Cook, Hugh L. *Paper Packaged Milk in Wisconsin: Its Part in Expanding Distribution Areas*. Madison: University of Wisconsin Agricultural Experiment Station, 1953.
- Dills, Lanie. *The "Official" CB Slang Language Dictionary*. Nashville: Dills, 1976.
- Directory of the Canning, Freezing, Preserving Industries*. Westminster, MD: Edward E. Judge & Son, 1968.
- Dobbs, Farrell. *Teamster Power*. New York: Monad, 1973.
- Ferguson, James L. *General Foods Corporation: A Chronicle of Consumer Satisfaction*. New York: Newcomen Society, 1985.
- Fruehauf, Roy. *Over the Road to Progress!: Fruehauf Truck Trailers*. New York: Newcomen Society, 1957.
- Fuyume, John. Interview by the Author. Jun. 21, 2004, Upper Deerfield Township, NJ.
- General Foods Corporation. *Annual Report, 1930-1965*.
- Henning, G. F. *The Truck and Its Relationship to Livestock Marketing in Ohio*, Bulletin 440. Wooster: Ohio Agricultural Experiment Station, 1929.
- Hill, Samuel E. *Teamsters and Transportation: Employee-Employer Relationships in New England*. Washington, DC: American Council on Public Affairs, 1942.
- Holtzman, Stan. *Big Rigs: The Complete History of the American Semi Truck*. Stillwater, MN: Voyageur Press, 2001.
- Johnson, E. C. and E. A. Johnson. *Trucking Livestock to South St. Paul*, Bulletin 278. St. Paul: University of Minnesota Agricultural Experiment Station, 1931.
- Kansas Animal Health Department. *Livestock Feed Lot Laws and Regulations: Recommended Feed Lot Management Practices*. Topeka, KS: Robert R. Sanders, State Printer, 1971.
- Kaylin, S. O. *Understanding Today's Food Warehouse*. New York: Chain Store Age Books, 1968.
- Keeshin, John Lewis. *No Fears, Hidden Tears: A Memoir of Four Score Years*. Chicago: Castle-Pierce Press, 1983.
- Kiehl, Elmer R., and V. J. Rhodes. *Historical Development of Beef Quality and Grading Standards*, Research Bulletin 728. Columbia: University of Missouri Agricultural Experiment Station, 1960.
- King, Clyde L. *The Price of Milk*. Philadelphia: John C. Winston, 1920.
- Krueger, Robert. *A Gypsy on 18 Wheels: A Trucker's Tale*. London: Praeger, 1975.
- Madsen, Axel. *Open Road: Truckin' on the Biting Edge*. San Diego: Harcourt, Brace, 1982.
- Marx, Karl. *Capital: A Critique of Political Economy, Vol. 1*. New York: Random House, 1906 [1867].
- Mason, Bobbie Ann. *Shiloh and Other Stories*. New York: Harper and Row, 1982.
- McCarthy, James F. *Highways, Trucks and New Industry: A Study of Changing Patterns in Plant Location*. Washington, DC: ATA Foundation, 1963.
- McCoy, John H., and Robert H. Wuhrman. *Some Economic Aspects of Commercial Cattle Feeding in Kansas*, Bulletin 424. Manhattan, KS: Kansas Agricultural Experiment Station, 1960.
- McKinsey and Company. *McKinsey-Birds Eye Study: The Economics of Frozen Foods*. White Plains, NY: General Foods Corporation, 1964.
- Merrill, Paul. *Forty-Six Years a Truckman: The Story of Merrill Transport Company*. New York: Newcomen Society, 1975.
- Moore, Clarence A., C. P. Wilson, and Harold M. Riley. *Marketing Feeder Cattle and Calves in Kansas*, Bulletin 361. Manhattan, KS: Kansas Agricultural Experiment Station, 1953.
- Mortenson, W. P. *Milk Distribution as a Public Utility*. Chicago: University of Chicago Press, 1940.
- Moser, David E., and Wesley R. Kriebel. *Transportation in Agriculture and Business*. Columbia: University of Missouri Extension, 1964.
- Motts, G. N. *Motor Truck Marketing of Michigan Fruits and Vegetables*, Michigan Agricultural Experiment Station, Special Bulletin 227. East Lansing, MI, 1932.
- Moulton, Harold G. *The American Transportation Problem*. Washington, DC: Brookings Institution, 1933.

- National Planning Association. *The Agricultural Research and Marketing Act of 1946: A Consideration of Basic Objectives and Procedures*. Washington: National Planning Association, 1948.
- _____. *Dare Farmers Risk Abundance?* Washington: National Planning Association, 1947.
- _____. *Must We Have Food Surpluses?* Washington: National Planning Association, 1949.
- _____. *Outer-Market Distribution of Milk in Paper Containers in the North Central Region*. Lafayette, IN: Purdue University Agricultural Experiment Station, 1953.
- Park, Clyde W, ed. *Milk Packaging for Retail Distribution: Report of a Controlled Experiment*. Cincinnati: A. H. Pugh, 1956.
- _____. *Rewriting the Menu of the World: The Story of the Most Revolutionary Idea in the History of Food*. Boston: Birds Eye Packing Company, 1931.
- Richards, Hoy A. "Coordination and Competition among Carriers." In *Transportation Problems and Policies in the Trans-Missouri West*. Edited by Jack R. Davidson and Howard W. Ottoson. Lincoln: University of Nebraska Press, 1967. Pp. 287-98.
- Riemer, Otto. *Hammer Down*. Winona, MN: Apollo Books, 1985.
- Ross, H. A. *The Marketing of Milk in the Chicago Dairy District*. Urbana: University of Illinois Agricultural Experiment Station, 1925.
- Sinclair, Upton. *The Jungle*. Urbana: University of Illinois Press, 1988 [1906].
- _____. *Autobiography*. New York: Harcourt, Brace, 1962.
- Smith, G. C. *An Evaluation of the USDA Beef Carcass Quality Grade Standards*. College Station: Texas Agricultural Experiment Station, 1980.
- Stern, Jane. *Trucker: A Portrait of the Last American Cowboy*. New York: McGraw-Hill, 1975.
- Stokely-Van Camp, Inc. *Annual Report*, 1945-1955.
- Super Market Institute. *The Super Market Industry Speaks*. Chicago: Super Market Institute, 1955-1969.
- Terkel, Studs. *Working: People Talk about What They Do All Day and How They Feel about What They Do*. New York: Pantheon Books, 1974.
- Tinstman, Dale C, and Robert L. Peterson. *Iowa Beef Processors, Inc.: An Entire Industry Revolutionized!* New York: Newcomen Society, 1981.
- Torgerson, Truman. *Building Markets and People Cooperatively: The Lake to Lake Story*. Manitowoc, WI: Lake to Lake Division of Land O'Lakes Inc. 1990.
- Van Arsdel, Wallace B. Michael Joseph Copley, and Robert L. Olson. *Quality and Stability of Frozen Foods: Time, Temperature Tolerance and Its Significance*. New York: Wiley-Interscience, 1969.
- Vandivier, Robert. Interview by the Author. Nov. 22, 2003, Lebanon, IN.
- Von Thünen, Johan Heinrich. *Von Thünen's Isolated State*. Translated by Carla M. Wartenberg. Edited by Peter Hall. Oxford: Pergamon Press, 1966 [1826].
- Wiley, James R. *Motor Transportation of Hogs to the Indianapolis Market*, Bulletin 337. Lafayette, IN: Purdue University Agricultural Experiment Station, 1930.
- Will, Frederic. *Big Rig Souls: Truckers in America's Heartland*. West Bloomfield, MI: A & M, 1992.
- Williams, Edwin W. *Frozen Foods: A Biography of an Industry*. Boston: Cahners, 1970.
- Williams, Willard F. *The Changing Structure of the Beef Packing Industry*. Lubbock, TX: TARA, 1979.
- Wisconsin Cartographers' Guild. *Wisconsin's Past and Present: A Historical Atlas*. Madison: University of Wisconsin Press, 1998.
- _____. *Wisconsin Dairies Cooperative*. Annual Report, 1973-74.
- Wise, Marc F. *Truck Stop*. Jackson: University Press of Mississippi, 1995.
- Woods, Harry D. *Woods Highway Truck Library*. New York Times Oral History Program. Glen Rock, NJ: Microfilming Corp. of America, 1975-77.
- Zimmerman, Max Mandell. *The Super Market: A Revolution in Distribution*. New York: McGraw-Hill, 1955.

Unpublished Theses

- Block, Daniel R. "The Development of Regional Institutions in Agriculture: The Chicago Milk Marketing Order." Ph.D. dissertation. University of California-Los Angeles, 1997.

- Day, Bruce Patrick. "The Role-Set of the Truck Driver: Issues of Worker Autonomy, Ideology, and Identity." Ph.D. dissertation. University of New Hampshire, 1996.
- Holroyd, William McGinnis. "Influences and Challenges of the Growing Frozen Food Industry on Refrigerated Transport Equipment." Ph.D. dissertation. Indiana University, 1960.
- Landsback, Jason. "Inception and Growth of an Anti-Teamster Movement among the Independent Steel Haulers." Master's thesis. University of Pittsburgh, 1971).
- Mainzer, Lewis C. "Science in a Political Context: The Agricultural Research and Marketing Act Program." Ph.D. dissertation. University of Chicago, 1957.
- Page, Brian Kirby. "Agro-Industrialization and Rural Transformation: The Restructuring of Midwestern Meat Production." Ph.D. dissertation. University of California-Berkeley, 1993.
- Rodriguez, Louis. "The Development of the Truck: A Constructivist History." Ph.D. dissertation. Lehigh University, 1997.
- Runcie, John F. "Social Group Formation in an Occupation: A Case Study of the Truck Driver." Ph.D. dissertation. University of Michigan, 1971.
- Sheifer, Victor Jack. "Technological Change and Collective Bargaining: Experiences in the New York Milk-Distributing Industry, 1939-1972." Ph.D. dissertation. New York University, 1974.
- Wilde, Mark W. "Industrialization of Food Processing in the United States, 1860-1960." Ph.D. dissertation. University of Delaware, 1988.

Secondary Sources

- Adams, Jane. *The Transformation of Rural Life: Southern Illinois, 1890-1990*. Chapel Hill: University of North Carolina Press, 1994.
- Aduddell, Robert, and Louis Cain. "Public Policy toward 'The Greatest Trust in the World'." *Business History Review* 55 (Summer 1981): 217-42.
- _____. "The Consent Decree in the Meatpacking Industry, 1920-1956." *Business History Review* 55 (Autumn 1981): 359-78.
- Aeilts, Larry. "The Milkman's Favorite Truck." *Michigan History Magazine* 82 (Mar. 1998): 8-11.
- Agar, Michael. *Independents Declared: The Dilemmas of Independent Trucking*. Washington: Smithsonian Institution Press, 1986.
- Allen, Michael Thad, and Gabrielle Hecht, eds. *Technologies of Power*. Cambridge, MA: MIT Press, 2001.
- Anderson, Jr., Oscar Edward. *Refrigeration in America: A History of a New Technology and Its Impact*. Princeton: Princeton University Press, 1953.
- Arnould, Richard J. "Changing Patterns of Concentration in American Meat Packing, 1880-1963." *Business History Review* 45 (Spring 1971): 18-34.
- Baker, Gordon E. *Rural versus Urban Political Power: The Nature and Consequences of Unbalanced Representation*. New York: Random House, 1955.
- Balinski, Michael L. and H. Peyton Young. *Fair Representation: Meeting the Ideal of One Man, One Vote*. New Haven: Yale University Press, 1982.
- Balogh, Brian. *Chain Reaction: Expert Debate and Public Participation in American Commercial Nuclear Power, 1945-1975*. New York: Cambridge University Press, 1991.
- _____. "The State of the State among Historians." *Social Science History* 27 (Fall 2003): 455-63.
- Barlett, Peggy F. *American Dreams, Rural Realities: Family Farms in Crisis*. Chapel Hill: University of North Carolina Press, 1993.
- Barron, Hal S. *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930*. Chapel Hill: University of North Carolina Press, 1997.
- Bayor, Ronald. "Roads to Racial Segregation: Atlanta in the Twentieth Century." *Journal of Urban History* 15 (Nov. 1988): 3-21.
- Belman, Dale L. Kristen A. Monaco, and Taggart J. Brooks. *Let It Be Palletized: A Portrait of Truck Drivers' Work and Lives*. Ann Arbor: University of Michigan Trucking Industry Program, 1998.
- Belzer, Michael H. *Sweatshops on Wheels: Winners and Losers in Trucking Deregulation*. New York: Oxford University Press, 2000.
- Bensel, Richard Franklin. *The Political Economy of American Industrialization, 1877-1900*. Cambridge: Cambridge University Press, 2000.

- _____. *Sectionalism and American Political Development, 1880-1980*. Madison: University of Wisconsin Press, 1984.
- Berger, Michael L. *The Devil Wagon in God's Country: The Automobile and Social Change in Rural America, 1893-1929*. Hamden, CT: Archon Books, 1979.
- Bernstein, Barton. "Clash of Interests: The Postwar Battle between the Office of Price Administration and the Department of Agriculture." *Agricultural History* 41 (Jan. 1967): 45-57.
- Berret, Jesse. "Feeding the Organization Man: Diet and Masculinity in Postwar America." *Journal of Social History* 30 (Summer 1997): 805-26.
- Berry, Chad. *Southern Migrants, Northern Exiles*. Urbana: University of Illinois Press, 2000.
- Biggs, Lindy. *The Rational Factory: Architecture, Technology, and Work in America's Age of Mass Production*. Baltimore: Johns Hopkins University Press, 1996.
- Bijker, Wiebe E. *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*. Cambridge, MA: MIT Press, 1995.
- Bisanz, Charles. "The Anatomy of a Mass Public Protest Action: A Shutdown by Independent Truck Drivers." *Human Organization* 36, no. 1 (1977): 63-9.
- Blake, Joseph A. "Occupational Thrill, Mystique and the Truckdriver." *Urban Life and Culture* Vol. 3, No. 2 (1974): 205-20.
- Blaszczyk, Regina Lee. *Imagining Consumers: Design and Innovation from Wedgwood to Corning*. Baltimore: Johns Hopkins University Press, 2000.
- Block, Daniel, and E. Melanie DuPuis. "Making the Country Work for the City: Von Thünen's Ideas in Geography, Agricultural Economics and the Sociology of Agriculture." *American Journal of Economics and Sociology* 60 (Jan. 2001): 79-98.
- Bluestone, Barry, and Bennett Harrison. *The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industry*. New York: Basic Books, 1982.
- Blum, John Morton. *V Was for Victory: Politics and American Culture during World War II*. New York: Harcourt, Brace, 1976.
- Bogue, Allen G. *From Prairie to Corn Belt: Farming on the Illinois and Iowa Prairies in the Nineteenth Century*. Chicago: University of Chicago Press, 1963.
- Booth, Douglas E. "Municipal Socialism and City Government Reform: The Milwaukee Experience." *Journal of Urban History* 12 (Nov. 1985): 51-74.
- Bowers, Douglas E. "The Research and Marketing Act of 1946 and Its Effects on Agricultural Marketing Research." *Agricultural History* 56 (Jan. 1982): 249-63.
- Boyd, William. "Making Meat: Science, Technology, and American Poultry Production." *Technology and Culture* 42 (Oct. 2001): 631-64.
- _____, and Michael Watts. "Agro-Industrial Just-in-Time." In *Globalising Food: Agrarian Questions and Global Restructuring*. Edited by David Goodman and Michael Watts. London: Routledge, 1997. Pp. 192-223.
- Brinkley, Alan. *The End of Reform: New Deal Liberalism in Recession and War*. New York: Vintage Books, 1995.
- Broadway, Michael J. "From City to Countryside: Recent Changes in the Structure and Location of the Meat- and Fish-Processing Industries." In *Any Way You Cut It*. Edited by Donald D. Stull, Michael J. Broadway, and David Griffith. Lawrence: University Press of Kansas, 1995. Pp. 17-40.
- Brody, David. *Workers in Industrial America: Essays on the Twentieth Century Struggle, 2nd Edition*. New York: Oxford University Press, 1993.
- Broehl, Jr., Wayne G. *Trucks, Trouble, and Triumph: The Norwalk Truck Line Company*. New York: Prentice-Hall, 1954.
- Brown, John K. *The Baldwin Locomotive Works, 1831-1915: A Study in American Industrial Practice*. Baltimore: Johns Hopkins University Press, 1995.
- Bufwack, Mary. "The Feminist Sensibility in Post-War Country Music." *Southern Quarterly* 22, no. 3 (1984): 135-44.
- Burns, William. "Changing Corporate Structure and Technology in the Retail Food Industry." In *Labor and Technology: Union Responses to Changing Environments*. Edited by Donald Kennedy, Charles Craypo, and Mary Lehman. University Park, PA: Department of Labor Studies, Pennsylvania State University, 1982. Pp. 27-52.

- Butz, Dale E., and George L. Baker, Jr., *The Changing Structure of the Meat Economy*. Cambridge, MA: Harvard Business School, 1960.
- Cantwell, Robert. *Bluegrass Breakdown: The Making of the Old Southern Sound*. Urbana: University of Illinois Press, 1984.
- Carney, George O. "Spatial Diffusion of the All-Country Music Radio Stations in the United States, 1971-74." *JEMF Quarterly* 13 (Summer 1977): 58-66.
- Chan, Sucheng. *This Bittersweet Soil: The Chinese in California Agriculture, 1860-1910*. Berkeley: University of California Press, 1986.
- Chandler, Jr., Alfred D. *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge, MA: Belknap Press, 1990.
- . *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*. Cambridge, MA: MIT Press, 1962.
- . *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press, 1977.
- Childs, William R. *Trucking and the Public Interest: The Emergence of Federal Regulation, 1914-1940*. Knoxville: University of Tennessee Press, 1985.
- Christenson, Reo Millard. *The Brannan Plan*. Ann Arbor: University of Michigan Press, 1959.
- Clemens, Elizabeth S. *The People's Lobby: Organizational Innovation and the Rise of Interest Group Politics in the United States, 1890-1925*. Chicago: University of Chicago Press, 1997.
- Clinard, Marshall B. *The Black Market: A Study of White Collar Crime*. New York: Rinehart, 1952.
- Cobb, James C. "From Muskogee to Luckenback: Country Music and the 'Southernization' of America." In *Redefining Southern Culture*. Athens: University of Georgia Press, 1999. Pp. 78-91.
- . "Rednecks, White Socks, and Piná Coladas? Country Music Ain't What It Used to Be and It Really Never Was." *Southern Cultures* (Winter 1999): 41-50.
- . *The Selling of the South: The Southern Crusade for Industrial Development, 1936-1990*. Second Edition. Urbana: University of Illinois Press, 1993.
- Cohen, Lizabeth. *A Consumers' Republic: The Politics of Mass Consumption in Postwar America*. New York: Knopf, 2003.
- . "From Town Center to Shopping Center: The Reconfiguration of Community Marketplaces in Postwar America." *American Historical Review* 101 (Oct. 1996): 1050-81.
- . *Making a New Deal: Industrial Workers in Chicago, 1919-1939*. Cambridge: Cambridge University Press, 1990.
- Cohen, Norm. *Long Steel Rail: The Railroad in American Folksong*. Urbana: University of Illinois Press, 1981.
- Collins, Robert M. *The Business Response to Keynes, 1929-1964*. New York: Columbia University Press, 1981.
- . "The Emergence of Economic Growthsmanship in the United States: Federal Policy and Economic Knowledge in the Truman Years." In *The State and Economic Knowledge: The American and British Experience*. Edited by Mary O. Furner and Barry Supple. Cambridge: Cambridge University Press, 1990. Pp. 138-70.
- Cooper, Gail. *Air-Conditioning America: Engineers and the Controlled Environment, 1900-1960*. Baltimore: Johns Hopkins University Press, 1998.
- Corey, Lewis. *Meat and Man: A Study of Monopoly, Unionism, and Food Policy*. New York: Viking Press, 1950.
- Corn, Joseph J. *The Winged Gospel: America's Romance with Aviation, 1900-1950*. New York: Oxford University Press, 1983.
- Cowan, Ruth Schwarz. "The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology." In *The Social Construction of Technological Systems*. Edited by Wiebe Bijker, Thomas Hughes, and Trevor Pinch. Cambridge, MA: MIT Press, 1987. Pp. 261-80.
- Cronon, William. *Nature's Metropolis: Chicago and the Great West*. New York: W. W. Norton, 1991.
- Crowe, Kenneth C. *Collision: How the Rank and File Took back the Teamsters*. New York: Scribner's, 1993.

- Culver, John C. and John Hyde. *American Dreamer: The Life and Times of Henry A. Wallace*. New York: W. W. Norton, 2000.
- Danbom, David B. *The Resisted Revolution: Urban America and the Industrialization of Agriculture, 1900-1930*. Ames: Iowa State University Press, 1979.
- _____. *Born in the Country: A History of Rural America*. Baltimore: Johns Hopkins University Press, 1995.
- Daniel, Cletus E. *Bitter Harvest: A History of California Farmworkers, 1870-1941*. Ithaca: Cornell University Press, 1981.
- Daniel, Pete. *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880*. Urbana: University of Illinois Press, 1985.
- Davis, Mike. *Late Victorian Holocausts: El Niño Famines and the Making of the Third World*. New York: Verso, 2001.
- Dawidoff, Nicholas. *In the Country of Country: People and Places in American Music*. New York: Pantheon Books, 1997.
- Dean, Virgil W. "Why Not the Brannan Plan?" *Agricultural History* 70 (Spring 1996): 268-82.
- Dethloff, Henry C, and Irvin M. May, Jr., eds. *Southwestern Agriculture: Pre-Columbian to Modern*. College Station: Texas A & M University Press, 1982.
- Douglas, Deborah G. *United States Women in Aviation, 1940-1985*. Washington: Smithsonian Institution Press, 1990.
- Douglas, Susan. *Inventing American Broadcasting, 1899-1922*. Baltimore: Johns Hopkins University Press, 1997.
- Dublin, Thomas. *Women at Work: The Transformation of Work and Community in Lowell, Massachusetts, 1826-1860*. New York: Columbia University Press, 1979.
- Dubofsky, Melvyn. *The State and Labor in Modern America*. Chapel Hill: University of North Carolina Press, 1994.
- Dudley, Kathryn Marie. *Debt and Dispossession: Farm Loss in America's Heartland*. Chicago: University of Chicago Press, 2000.
- Dunlavy, Colleen A. *Politics and Industrialization: Early Railroads in the United States and Prussia*. Princeton: Princeton University Press, 1994.
- DuPuis, E. Melanie. *Nature's Perfect Food: How Milk Became America's Drink*. New York: New York University Press, 2002.
- Durand, Jr., Loyal. "The Migration of Cheese Manufacture in the United States." *Annals of the Association of American Geographers*, 42 (Dec. 1952): 263-82.
- Effland, Anne B. W. "When Rural Does not Equal Agricultural." *Agricultural History* 74 (Spring 2000): 489-501.
- Engel, Cynthia. "Competition Drives the Trucking Industry." *Monthly Labor Review* 121 (Apr. 1998): 34-41.
- Feinsinger, Nathan P. *Collective Bargaining in the Trucking Industry*. Philadelphia: University of Pennsylvania Press, 1949.
- Fellmeth, Robert. *The Interstate Commerce Omission: The Public Interest and the ICC*. New York: Grossman, 1970.
- Felton, John Richard, and Dale G. Anderson, eds. *Regulation and Deregulation of the Motor Carrier Industry*. Ames: Iowa State University Press, 1989.
- Ferleger, Lou, ed. *Agriculture and National Development: Views on the Nineteenth Century*. Ames: Iowa State University Press, 1990.
- Fink, Deborah. *Agrarian Women: Wives and Mothers in Rural Nebraska, 1880-1940*. Chapel Hill: University of North Carolina Press, 1992.
- _____. *Cutting into the Meatpacking Line: Workers and Change in the Rural Midwest*. Chapel Hill: University of North Carolina Press, 1998.
- Finlay, Mark R. "The Industrial Utilization of Farm Products and By-Products: The USDA Regional Research Laboratories." *Agricultural History* 64 (Spring 1990): 41-52.
- Fishlow, Albert. *American Railroads and the Transformation of the Antebellum Economy*. Cambridge: Harvard University Press, 1966.
- Fite, Gilbert C. *American Farmers: The New Minority*. Bloomington: Indiana University Press, 1981.
- _____. *Cotton Fields No More: Southern Agriculture, 1865-1980*. Lexington: University Press of Kentucky, 1984.

- _____. *George N. Peek and the Fight for Farm Parity*. Norman: University of Oklahoma Press, 1954.
- Fitzgerald, Deborah. "Beyond Tractors: The History of Technology in American Agriculture." *Technology and Culture* 32 (Jan. 1991): 114-26.
- _____. *The Business of Breeding: Hybrid Corn in Illinois, 1890-1940*. Ithaca: Cornell University Press, 1990.
- _____. *Every Farm a Factory: The Industrial Ideal in American Agriculture*. New Haven: Yale University Press, 2003.
- FitzSimmons, Margaret. "The New Industrial Agriculture: The Regional Integration of Specialty Crop Production." *Economic Geography* 62 (Oct. 1986): 334-53.
- Flink, James. *The Car Culture*. Cambridge, MA: MIT Press, 1976.
- _____. *The Automobile Age*. Cambridge, MA: MIT Press, 1988.
- Flittie, Edwin G, and Zane P. Nelson. "The Truck Driver: A Sociological Analysis of an Occupational Role." *Sociology and Social Research* 52:3 (1968): 205-10.
- Fogel, Robert W. *Railroads and American Economic Growth: Essays in Econometric History*. Baltimore: Johns Hopkins University Press, 1964.
- _____, and Stanley L. Engerman. *Time on the Cross: The Economics of American Negro Slavery*. Boston: Little, Brown, and Company, 1974.
- Foley, Neil. *The White Scourge: Mexicans, Blacks, and Poor Whites in Texas Cotton Culture*. Berkeley: University of California Press, 1997.
- Fones-Wolf, Elizabeth A. *Selling Free Enterprise: The Business Assault on Labor and Liberalism, 1945-1960*. Urbana: University of Illinois Press, 1994.
- Forsythe, James L. "Clifford Hope of Kansas: Practical Congressman and Agrarian Idealist." *Agricultural History* 51 (Apr. 1977): 407-20.
- Fouche, Rayvon. *Black Inventors in the Age of Segregation*. Baltimore: Johns Hopkins University Press, 2003.
- Fraser, Steve. *Labor Will Rule: Sidney Hillman and the Rise of American Labor*. New York: Free Press, 1991.
- _____, and Gary Gerstle, eds. *The Rise and Fall of the New Deal Order, 1930-1980*. Princeton: Princeton University Press, 1989.
- Friedland, William H. Amy Barton, and Robert J. Thomas. *Manufacturing Green Gold: Capital, Labor, and Technology in the Lettuce Industry*. New York: Cambridge University Press, 1981.
- Friedman, Samuel R. *Teamster Rank and File: Power, Bureaucracy, and Rebellion at Work and in a Union*. New York: Columbia University Press, 1982.
- Friskies-Warren, Bill, and David Cantwell. *Heartaches by the Number: Country Music's 500 Greatest Singles*. Nashville: Vanderbilt University Press, 2002.
- Fryd, Vivien Green. "'The Sad Twang of Mountain Voices': Thomas Hart Benton's Sources of Country Music." *South Atlantic Quarterly* 94 (Winter 1995): 301-35.
- Garnel, Donald. *The Rise of Teamster Power in the West*. Berkeley: University of California Press, 1972.
- Gates, Paul W. *The Illinois Central Railroad and Its Colonization Work*. Cambridge: Harvard University Press, 1934.
- Giedion, Sigfried. *Mechanization Takes Command: A Contribution to Anonymous History*. New York: Oxford University Press, 1948.
- Gilbert, Jess. "Eastern Urban Intellectuals and Midwestern Agrarian Intellectuals: Two Group Portraits of Progressives in the New Deal Department of Agriculture." *Agricultural History* 74 (Sep. 2000): 162-80.
- _____, and Raymond Akor. "Increasing Structural Divergence in United States Dairying: California and Wisconsin since 1950." *Rural Sociology* 53 (Spring 1988): 56-72.
- Gillingham, J B. *The Teamsters Union on the West Coast*. Berkeley: Institute of Industrial Relations, University of California, 1956.
- Gjerde, Jon. *The Minds of the West: Patterns of Ethnocultural Evolution in the Rural Middle West, 1830-1917*. Chapel Hill: University of North Carolina Press, 1997.
- Glickman, Lawrence B. *A Living Wage: American Workers and the Making of Consumer Society*. Ithaca: Cornell University Press, 1997.

- Goddard, Stephen. *Getting There: The Epic Struggle between Road and Rail in the American Century*. New York: Basic Books, 1994.
- Goldberg, Ray A. *Agribusiness Coordination: A Systems Approach to the Wheat, Soybean, and Florida Orange Economies*. Boston: Harvard Business School, 1968.
- Goldschmidt, Walter G. *As You Sow: Three Studies in the Social Consequences of Agribusiness*. Montclair: Allanheld, Osmun, 1978 (1947).
- Goodwyn, Lawrence. *The Populist Moment: A Short History of the Agrarian Revolt in America*. Oxford: Oxford University Press, 1978.
- Gordon, Colin. *New Deals: Business, Labor, and Politics in America, 1920-1935*. Cambridge: Cambridge University Press, 1994.
- _____. "Why No Corporatism in the United States?: Business Disorganization and Its Consequences." *Business and Economic History* 27 (Oct. 1998): 29-46.
- Gouveia, Lourdes, and Donald D. Stull. "Dances with Cows: Beefpacking's Impact on Garden City, Kansas, and Lexington, Nebraska." In *Any Way You Cut It*. Edited by Donald D. Stull, Michael J. Broadway, and David Griffith. Lawrence: University Press of Kansas, 1995. Pp. 85-108.
- Griffith, Robert. "Dwight D. Eisenhower and the Corporate Commonwealth." *American Historical Review* 87 (Feb. 1982): 87-122.
- _____. "Forging America's Postwar Order: Domestic Politics and Political Economy in the Age of Truman." In *The Truman Presidency*. Edited by Michael J. Lacey. Cambridge: Cambridge University Press, 1989.
- Grossman, Lawrence S. *The Political Ecology of Bananas: Contract Farming, Peasants, and Agrarian Change in the Eastern Caribbean*. Chapel Hill: University of North Carolina Press, 1998.
- Gupta, Akhil. *Postcolonial Developments: Agriculture in the Making of Modern India*. Durham: Duke University Press, 1998.
- Guth, James. "Herbert Hoover, The U.S. Food Administration, and the Dairy Industry, 1917-1918." *Business History Review* 55 (Summer 1981): 170-87.
- _____. "Consumer Organizations and Federal Dairy Policy." *Policy Studies Journal* 6 (Summer 1978): 499-503.
- Hahamovitch, Cindy. *The Fruits of Their Labor: Atlantic Coast Farmworkers and the Making of Migrant Poverty, 1870-1945*. Chapel Hill: University of North Carolina Press, 1997.
- Hallberg, Milton C. *Economic Trends in U.S. Agriculture and Food Systems since World War II*. Ames: Iowa State University Press, 2001.
- Hamilton, David E. *From New Day to New Deal: American Farm Policy from Hoover to Roosevelt, 1928-1933*. Chapel Hill: University of North Carolina Press, 1991.
- Hamilton, Shane. "Cold Capitalism: The Political Ecology of Frozen Concentrated Orange Juice." *Agricultural History* 77 (Fall 2003): 557-81.
- _____. "The Economies and Conveniences of Modern-Day Living: Frozen Foods and Mass Marketing, 1945-1965." *Business History Review* 77 (Spring 2003): 33-60.
- _____. "Trains Are Like Flowers: Nature and Technology in Traditional Bluegrass Music." *Odense American Studies International Series*, (Feb. 2003): 1-32.
- Hansen, John Mark. *Gaining Access: Congress and the Farm Lobby, 1919-1981*. Chicago: University of Chicago Press, 1991.
- Harper, Donald V. *Economic Regulation of the Motor Trucking Industry by the States*. Urbana: University of Illinois Press, 1950.
- Harper, Douglas. *Changing Works: Visions of a Lost Agriculture*. Chicago: University of Chicago Press, 2001.
- Harris, Donald J. "On Marx's Scheme of Reproduction and Accumulation." *Journal of Political Economy* 80 (May 1972): 505-22.
- Harrison, Charles Hampton. *Growing a Global Village: Making History at Seabrook Farms*. New York: Holmes & Meier, 2003.
- Hart, John Fraser. *The Changing Scale of American Agriculture*. Charlottesville: University of Virginia Press, 2003.
- Harvey, David. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Oxford: Blackwell, 1990.

- Haslam, Gerald W. *Workin' Man Blues: Country Music in California*. Berkeley: University of California Press, 1999.
- Hawley, Ellis W. *The New Deal and the Problem of Monopoly: A Study in Economic Ambivalence*. Princeton: Princeton University Press, 1966.
- _____. *The Great War and the Search for a Modern Order: A History of the American People and Their Institutions*. New York: St. Martin's Press, 1979.
- Hays, Samuel P. and Barbara D. Hays. *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985*. Cambridge: Cambridge University Press, 1987.
- Haystead, Ladd, and Gilbert C. Fite. *The Agricultural Regions of the United States*. Norman: University of Oklahoma Press, 1955.
- Hecht, Gabrielle. *The Radiance of France: Nuclear Power and National Identity after World War II*. Cambridge, MA: MIT Press, 1998.
- Hemphill, Paul. *The Nashville Sound: Bright Lights and Country Music*. New York: Simon and Schuster, 1970.
- Hicks, John D. *The Populist Revolt: A History of the Farmers' Alliance and the People's Party*. Lincoln: University of Nebraska Press, 1961 [1931].
- Hightower, Jim. *Hard Tomatoes, Hard Times: The Failure of the Land Grant College Complex*. Washington: Agribusiness Accountability Project, 1972.
- Hofstadter, Richard. *The Age of Reform: From Bryan to F. D. R.* New York: Vintage Books, 1955.
- Hoglund, A. William. "Wisconsin Dairy Farmers on Strike." *Agricultural History* 35 (Jan. 1961): 24-34.
- Hoogenboom, Ari, and Olive Hoogenboom. *A History of the ICC: From Panacea to Palliative*. New York: W. W. Norton, 1976.
- Horowitz, David A. *Beyond Left and Right: Insurgency and the Establishment*. Urbana: University of Illinois Press, 1997.
- Horowitz, Roger, and Arwen Mohun, eds. *His and Hers: Gender, Consumption, and Technology*. Charlottesville: University Press of Virginia, 1998.
- Horowitz, Roger, ed. *Boys and Their Toys?: Masculinity, Technology, and Class in America*. New York: Routledge, 2001.
- _____. "Making the Chicken of Tomorrow: Reworking Poultry as Commodities and as Creatures, 1945-1990." In *Industrializing Organisms*. Edited by Susan R. Schrepfer and Philip Scranton. New York: Routledge, 2004. Pp. 215-35.
- _____. *Negro and White, Unite and Fight!: A Social History of Industrial Unionism in Meatpacking, 1930-90*. Urbana: University of Illinois Press, 1997.
- Horstman, Dorothy. *Sing Your Heart Out, Country Boy: Classic Country Songs and Their Inside Stories, by the Writers Who Wrote Them*, 3d rev. ed. Nashville: The Country Music Foundation, 1986.
- Hounshell, David A. *From the American System to Mass Production, 1800-1932: The Development of Manufacturing Technology in the United States*. Baltimore: Johns Hopkins University Press, 1984.
- Hoyman, Michele. *Power Steering: Global Automakers and the Transformation of Rural Communities*. Lawrence: University Press of Kansas, 1997.
- Hughes, Charles C. "Saint Lawrence Island Eskimo." In *Handbook of North American Indians, Vol. 5: Arctic*. Edited by David Damas. Washington: Smithsonian Institution Press, 1984.
- Hughes, Thomas P. *Networks of Power: Electrification in Western Society, 1880-1930*. Baltimore: Johns Hopkins University Press, 1983.
- _____. *Rescuing Prometheus*. New York: Pantheon Books, 1998.
- Hunter, Louis C. *Steamboats on the Western Rivers: An Economic and Technological History*. New York: Dover, 1993 [1949].
- Hurt, R. Douglas. *Agricultural Technology in the Twentieth Century*. Manhattan, KS: Sunflower University Press, 1991.
- Hyman, Paula E. "Immigrant Women and Consumer Protest: The New York City Kosher Meat Boycott of 1902." *American Jewish History* 70 (Sep. 1980): 91-105.
- Interrante, Joseph. "You Can't Go to Town in a Bathtub: Automobile Movement and the Reorganization of Rural American Space, 1900-1930." *Radical History Review* 21 (1979): 151-68.

- Jackson, John Brinckerhoff. *A Sense of Place, a Sense of Time*. New Haven: Yale University Press, 1994.
- Jackson, Kenneth T. *Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press, 1985.
- Jacobs, Meg. "'How About Some Meat?': The Office of Price Administration, Consumption Politics, and State Building from the Bottom Up, 1941-1946." *Journal of American History* 84 (Dec. 1997): 910-41.
- _____. "Inflation: The 'Permanent Dilemma' of the American Middle Classes." In *Social Contracts under Stress: The Middle Classes of America, Europe, and Japan at the Turn of the Century*. Edited by Olivier Zunz, Leonard Schoppa, and Nobuhiro Hiwatari. New York: Sage, 2002. Pp. 130-53.
- _____. *Pocketbook Politics: Economic Citizenship in Twentieth-Century America*. Princeton: Princeton University Press, 2005.
- _____. and William J. Novak, and Julian Zelizer, eds. *The Democratic Experiment: New Directions in American Political History*. Princeton: Princeton University Press, 2003.
- Jacoby, Sanford M. *Modern Manors: Welfare Capitalism since the New Deal*. Princeton: Princeton University Press, 1997.
- Jakle, John A. and Keith A. Sculle. *The Gas Station in America*. Baltimore: Johns Hopkins University Press, 1994.
- James, Ralph C, and Estelle Dinerstein James. *Hoffa and the Teamsters: A Study of Union Power*. Princeton: Van Nostrand, 1965.
- Jellison, Katherine. *Entitled to Power: Farm Women and Technology, 1919-1963*. Chapel Hill: University of North Carolina Press, 1993.
- Jensen, Joan. *With These Hands: Women Working on the Land*. Old Westbury, NY: Feminist Press, 1981.
- _____. "Dairying and Changing Patterns of Family Labor in Rural New Mexico." *New Mexico Historical Review*, 75 (Apr. 2000): 157-94.
- John, Richard R. "Governmental Institutions as Agents of Change: Rethinking American Political Development in the Early Republic, 1787-1835." *Studies in American Political Development* 11 (Fall 1997): 347-80.
- _____. *Spreading the News: The American Postal System from Franklin to Morse*. Cambridge, MA: Harvard University Press, 1995.
- Jordan, John M. *Machine-Age Ideology: Social Engineering and American Liberalism, 1911-1939*. Chapel Hill: University of North Carolina Press, 1994.
- Karolevitz, Robert F. *This Was Trucking: A Pictorial History of the First Quarter Century of Commercial Motor Vehicles*. Seattle: Superior Publishing, 1966.
- Kazin, Michael. *The Populist Persuasion: An American History*. New York: Basic Books, 1995.
- Kimmelman, Barbara A. "Organisms and Interests in Scientific Research: R. A. Emerson's Claims for the Unique Contributions of Agricultural Genetics." In *The Right Tools for the Job: At Work in Twentieth-Century Life Sciences*. Edited by Adele E. Clarke and Joan H. Fujimura. Princeton: Princeton University Press, 1992. Pp. 198-232.
- Kirby, Jack Temple. *Poquosin: A Study of Rural Landscape and Society*. Chapel Hill: University of North Carolina Press, 1995.
- Kirkendall, Richard S. *Social Scientists and Farm Politics in the Age of Roosevelt*. Columbia: University of Missouri Press, 1966.
- Kline, Ronald R. *Consumers in the Country: Technology and Social Change in Rural America*. Baltimore: Johns Hopkins University Press, 2000.
- _____. and Trevor Pinch. "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States." *Technology and Culture* 37 (Oct. 1996): 763-95.
- Kloppenburg, Jr., Jack R. *First the Seed: The Political Economy of Plant Biotechnology, 1492-2000*. Cambridge: Cambridge University Press, 1988.
- Kolko, Gabriel. *Railroads and Regulation, 1877-1916*. Princeton: Princeton University Press, 1965.
- Kulikoff, Allan. *The Agrarian Origins of American Capitalism*. Charlottesville: University Press of Virginia, 1992.

- Lake, David A. "Export, Die, or Subsidize: The International Political Economy of American Agriculture, 1875-1940." *Comparative Studies in Society and History*, 31 (Jan. 1989): 81-105.
- Lampard, Eric E. *The Rise of the Dairy Industry in Wisconsin: A Study in Agricultural Change, 1820-1920*. Madison: State Historical Society of Wisconsin, 1963.
- Lauck, Jon. *American Agriculture and the Problem of Monopoly: The Political Economy of Grain Belt Farming, 1953-1980*. Lincoln: University of Nebraska Press, 2000.
- Leach, William. *Land of Desire: Merchants, Power, and the Rise of a New American Culture*. New York: Pantheon Books, 1993.
- Leone, Richard D. *The Negro in the Trucking Industry*. Philadelphia: Wharton School, University of Pennsylvania, 1970.
- Levenstein, Harvey. *Revolution at the Table: The Transformation of the American Diet*. New York: Oxford University Press, 1988.
- Levinson, Harold M. "Trucking." In *Collective Bargaining: Contemporary American Experience*. Edited by Gerald G. Somers. Madison, WI: Industrial Relations Research Association, 1980.
- _____, et al. *Collective Bargaining and Technological Change in American Transportation*. Evanston, IL: Transportation Center at Northwestern University, 1971.
- Lewis, Ronald L. *Transforming the Appalachian Countryside: Railroads, Deforestation, and Social Change in West Virginia, 1880-1920*. Chapel Hill: University of North Carolina Press, 1998.
- Lewis, Tom. *Divided Highways: Building the Interstate Highways, Transforming American Life*. New York: Viking Press, 1997.
- Lewthwaite, Gordon R. "Wisconsin Cheese and Farm Type: A Locational Hypothesis." *Economic Geography* 40 (Apr. 1964): 95-112.
- Licht, Walter. *Working for the Railroad: The Organization of Work in the Nineteenth Century*. Princeton: Princeton University Press, 1983.
- Lichtenstein, Nelson. *Labor's War at Home: The CIO and World War II*. New York: Cambridge University Press, 1982.
- _____. *Walter Reuther: The Most Dangerous Man in Detroit*. Urbana: University of Illinois Press, 1995.
- Linder, Marc, and Lawrence S. Zacharias. *Of Cabbages and Kings County: Agriculture and the Formation of Modern Brooklyn*. Iowa City: University of Iowa Press, 1999.
- Malone, Bill C. *Country Music U.S.A.*, rev. ed. Austin: University of Texas Press, 1985.
- _____. *Don't Get above Your Raisin': Country Music and the Southern Working Class*. Urbana: University of Illinois Press, 2002.
- Marchand, Roland. "Visions of Classlessness, Quests for Dominion: American Popular Culture, 1945-1960." In *Reshaping America: Society and Institutions, 1945-1960*. Edited by Robert H. Bremner and Gary W. Reichard. Columbus: Ohio State University Press, 1982. Pp. 165-70.
- Martin, Albro. *Enterprise Denied*. New York: Columbia University Press, 1971.
- _____. *Railroads Triumphant: The Growth, Rejection, and Rebirth of a Vital American Force*. New York: Oxford University Press, 1992.
- Marx, Leo. *The Machine in the Garden: Technology and the Pastoral Ideal in America*, 2nd ed. New York: Oxford University Press, 2000 [1964].
- Matusow, Allen J. *Farm Policies and Politics in the Truman Years*. Cambridge, MA: Harvard University Press, 1967.
- _____. *Nixon's Economy: Booms, Busts, Dollars, and Votes*. Lawrence: University Press of Kansas, 1998.
- May, Elaine Tyler. *Homeward Bound: American Families in the Cold War Era*. New York: Basic Books, 1988.
- McCorkle, Jr., James L. "Agricultural Experiment Stations and Southern Truck Farming." *Agricultural History* 62 (Spring 1988): 234-43.
- McCraw, Thomas K. *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn*. Cambridge, MA: Harvard University Press, 1984.
- McGirr, Lisa. *Suburban Warriors: The Origins of the New Right*. Princeton: Princeton University Press, 2001.
- McGovern, Charles. "Consumption and Citizenship in the United States, 1900-1940." In *Getting and Spending: European and American Consumer Societies in the Twentieth Century*.

- Edited by Susan Strasser, Charles McGovern, and Matthias Judt. New York: Cambridge University Press, 1998. Pp. 37-58.
- McMath, Jr., Robert C. *American Populism: A Social History, 1877-1898*. New York: Hill and Wang, 1993.
- McMurry, Sally. *Transforming Rural Life: Dairying Families and Agricultural Change, 1820-1885*. Baltimore: Johns Hopkins University Press, 1995.
- McShane, Clay. *Down the Asphalt Path: The Automobile and the American City*. New York: Columbia University Press, 1994.
- McWilliams, Carey. *Factories in the Field: The Story of Migratory Farm Labor in California*. Boston: Little, Brown, and Company, 1939.
- Meyer, John R., et al. *The Economics of Competition in the Transportation Industries*. Cambridge, MA: Harvard University Press, 1959.
- Milkis, Sidney M. *Political Parties and Constitutional Government: Remaking American Democracy*. Baltimore: Johns Hopkins University Press, 1999.
- Miller, George H. *Railroads and the Granger Laws*. Madison: University of Wisconsin Press, 1971.
- Misa, Thomas J. *A Nation of Steel: The Making of Modern America, 1865-1925*. Baltimore: Johns Hopkins University Press, 1998.
- Mohun, Arwen P. *Steam Laundries: Gender, Technology, and Work in the United States and Great Britain, 1880-1940*. Baltimore: Johns Hopkins University Press, 1999.
- Mom, Gijis P. A., and David A. Kirsch. "Technologies in Transition: Horses, Electric Trucks, and the Motorization of American Cities, 1900-1925." *Technology and Culture* 42 (Jul. 2001): 489-518.
- Muller, Peter O. "Trend Surfaces of American Agricultural Patterns: A Macro-Thünian Analysis." *Economic Geography* 49 (Jul. 1973): 228-42.
- Mumford, Lewis. *Technics and Civilization*. New York: Harcourt, 1963 [1934].
- Nall, Garry L. "The Cattle-Feeding Industry on the Texas High Plains." In *Southwestern Agriculture*. Edited by Henry C. Dethloff and Irvin M. May, Jr., College Station: Texas A & M University Press, 1982. Pp. 106-15.
- Nelson, Daniel. *Farm and Factory: Workers in the Midwest, 1880-1990*. Bloomington: Indiana University Press, 1995.
- Neth, Mary. *Preserving the Family Farm: Women, Community, and the Foundations of Agribusiness in the Midwest, 1900-1940*. Baltimore: Johns Hopkins University Press, 1995.
- O'Malley, Michael. *Keeping Watch: A History of American Time*. Washington: Smithsonian Institution Press, 1990.
- _____. "Time, Work, and Task Orientation: A Critique of American Historiography." *Time and Society*, 1, no. 3 (1992): 341-58.
- Oberdeck, Kathryn J. "Review of Workin' Man Blues and Don't Get Above Your Raisin'." *Labor History*, 44:4 (2003): 528-31.
- Odom, E. Dale. "Associated Milk Producers, Incorporated: Testing the Limits of Capper-Volstead." *Agricultural History* 59 (Jan. 1985): 40-55.
- Oldenziel, Ruth. *Making Technology Masculine: Men, Women, and Modern Machines in America, 1870-1945*. Amsterdam: Amsterdam University Press, 1999.
- Ortega, Bob. In *Sam We Trust: The Untold Story of Sam Walton Wal-Mart, The World's Most Powerful Retailer*. New York: Times Business, 2000.
- Ouellet, Lawrence J. *Pedal to the Metal: The Work Lives of Truckers*. Philadelphia: Temple University Press, 1994.
- Paarlberg, Robert, and Don Paarlberg. "Agricultural Policy in the Twentieth Century." *Agricultural History* 72 (Sep. 2000): 136-61.
- Padberg, Daniel I. *The Economics of Food Retailing*. Ithaca: Food Distribution Program, 1969.
- Page, Brian. "Across the Great Divide: Agriculture and Industrial Geography." *Economic Geography* 72 (Oct. 1996): 376-97.
- _____, and Richard Walker. "From Settlement to Fordism: The Agro-Industrial Revolution in the American Midwest." *Economic Geography* 67 (Oct. 1991): 281-315.
- Perry, Charles R. *Deregulation and the Decline of the Unionized Trucking Industry*. Philadelphia: Wharton School, University of Pennsylvania, 1986.

- Peterson, Richard A. *Creating Country Music: Fabricating Authenticity*. Chicago: University of Chicago Press, 1997.
- Peterson, Trudy H. *Agricultural Exports, Farm Income, and the Eisenhower Administration*. Lincoln: University of Nebraska Press, 1979.
- Piore, Michael J., and Charles F. Sabel. *The Second Industrial Divide: Possibilities for Prosperity*. New York: Basic Books, 1984.
- Pollan, Michael. *The Botany of Desire: A Plant's-Eye View of the World*. New York: Random House, 2000.
- _____. "Power Steer." *New York Times Magazine*. Mar. 31, 2002. Pp. 44-51, 68-77.
- Porter, Roger B. *The U.S.-U.S.S.R. Grain Agreement*. Cambridge, MA: Harvard University Press, 1984.
- Porter, Theodore M. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press, 1995.
- Porterfield, Nolan. *Jimmie Rodgers: The Life and Times of America's Blue Yodeler*. Urbana: University of Illinois Press, 1979.
- Post, Robert C. *High Performance: The Culture and Technology of Drag Racing, 1950-1990*. Baltimore: Johns Hopkins University Press, 1994.
- Quinby, J. Roy. "Hybrid Sorghum: A Triumph of Research." In *Southwestern Agriculture*. Edited by Henry C. Dethloff and Irvin M. May, Jr., College Station: Texas A & M University Press, 1982. Pp. 93-105.
- Ramsey, Richard. "The People versus Smokey Bear." *Journal of Popular Culture* 13: 2 (1979): 338-44.
- Robyn, Dorothy. *Braking the Special Interests: Trucking Deregulation and the Politics of Policy Reform*. Chicago: University of Chicago Press, 1987.
- Rockoff, Hugh. *Drastic Measures: A History of Wage and Price Controls in the United States*. Cambridge: Cambridge University Press, 1984.
- Rodgers, Daniel T. *Atlantic Crossings: Social Politics in a Progressive Age*. Cambridge, MA: Harvard University Press, 1998.
- _____. *The Work Ethic in Industrial America, 1850-1920*. Chicago: University of Chicago Press, 1978.
- Roetting, Matthias, et al. "When Technology Tells You How to Drive: Truck Drivers' Attitudes towards Feedback by Technology." *Transportation Research Part F: Traffic Psychology and Behaviour*. 6 (Dec. 2003): 275-87.
- Rome, Adam. *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism*. Cambridge: Cambridge University Press, 2001.
- Rose, Mark H. *Interstate: Express Highway Politics, 1939-1989*, 2d ed. Knoxville: University of Tennessee Press, 1990.
- Rosenzweig, Roy. *Eight Hours for What We Will: Workers and Leisure in an Industrial City, 1870-1920*. Cambridge: Cambridge University Press, 1983.
- Rosner, Lisa, ed. *The Technological Fix: How People Use Technology to Create and Solve Problems*. New York: Routledge, 2004.
- Ross, Eric B. "Patterns of Diet and Forces of Production: An Economic and Ecological History of the Ascendancy of Beef in the United States Diet." In *Beyond the Myths of Culture*. Edited by Eric Ross. New York: Academic Press, 1980. Pp. 181-225.
- Rothenberg, Lawrence S. *Regulation, Organizations, and Politics: Motor Freight Policy at the Interstate Commerce Commission*. Ann Arbor: University of Michigan Press, 1994.
- Rotundo, E. Anthony. *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era*. New York: Basic Books, 1993.
- Russell, Edmund P. "The Strange Career of DDT: Experts, Federal Capacity, and 'Environmentalism' in World War II." *Technology and Culture* 40 (Oct. 1999): 770-96.
- Russell, Thaddeus. *Out of the Jungle: Jimmy Hoffa and the Remaking of the American Working Class*. New York: Knopf, 2001.
- Sabel, Charles F., and Jonathan Zeitlin, eds. *World of Possibilities: Flexibility and Mass Production in Western Industrialization*. Cambridge: Cambridge University Press, 1997.
- Sackman, Douglas C. *Orange Empire: California and the Fruits of Eden*. Berkeley: University of California Press, 2005.

- Salamon, Sonya. *Prairie Patrimony: Family, Farming, and Community in the Midwest*. Chapel Hill: University of North Carolina Press, 1992.
- Saloutos, Theodore, and John D. Hicks. *Twentieth-Century Populism: Agricultural Discontent in the Middle West, 1900-1939*. Lincoln: University of Nebraska Press, 1951.
- Sanders, Elizabeth. *Roots of Reform: Farmers, Workers, and the American State, 1877-1917*. Chicago: University of Chicago Press, 1999.
- Schapsmeier, Edward L. and Frederick H. Schapsmeier. *Ezra Taft Benson and the Politics of Agriculture: The Eisenhower Years, 1953-1961*. Danville, IL: Interstate Printers and Publishers, 1975.
- Schatzberg, Eric. *Wings of Wood, Wings of Metal: Culture and Technical Choice in American Airplane Materials, 1914-1945*. Princeton: Princeton University Press, 1999.
- Schell, Orville. *Modern Meat*. New York: Random House, 1984.
- Schivelbusch, Wolfgang. *The Railway Journey: The Industrialization of Time and Space in the 19th Century*. Berkeley: University of California Press, 1986.
- Schlebecker, John T. *Cattle Raising on the Plains, 1900-1961*. Lincoln: University of Nebraska Press, 1963.
- Schlereth, Thomas J. *Reading the Road: U. S. 40 and the American Landscape*, rev. ed. Knoxville: University of Tennessee Press, 1997.
- Schlosser, Eric. *Fast Food Nation: The Dark Side of the All-American Meal*. Boston: Houghton Mifflin, 2001.
- Schmidt, Hubert G. *Agriculture in New Jersey*. New Brunswick: Rutgers University Press, 1973.
- Schrag, Zachary M. "'The Bus Is Young and Honest': Transportation Politics, Technical Choice, and the Motorization of Manhattan Surface Transit, 1919-1936." *Technology and Culture* 41 (Jan. 2000): 51-79.
- Schrepfer, Susan R., and Philip Scranton, eds. *Industrializing Organisms: Introducing Evolutionary History*. New York: Routledge, 2004.
- Schulman, Bruce J. *The Seventies: The Great Shift in American Culture, Society, and Politics*. New York: Free Press, 2001.
- Schwartz, Marvin. *J. B. Hunt: The Long Haul to Success*. Fayetteville: University of Arkansas Press, 1992.
- Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.
- Scranton, Philip. *Endless Novelty: Specialty Production and American Industrialization, 1865-1925*. Princeton: Princeton University Press, 1997.
- _____. *Proprietary Capitalism: The Textile Manufacture at Philadelphia, 1800-1885*. Cambridge: Cambridge University Press, 1983.
- Seabrook, John M. *The Henry Ford of Agriculture: Charles F. Seabrook 1881-1964 and Seabrook Farms 1893-1959*. Seabrook, NJ: Seabrook Educational and Cultural Center, 1995.
- Seely, Bruce E. *Building the American Highway System: Engineers as Policy Makers*. Philadelphia: Temple University Press, 1987.
- Shannon, Fred A. *The Farmer's Last Frontier: Agriculture, 1860-1897*. New York: Farrar and Rhinehart, 1945.
- Shaw, Ronald E. *Canals for a Nation: The Canal Era in the United States, 1790-1860*. Lexington: University Press of Kentucky, 1990.
- Sheingate, Adam D. *The Rise of the Agricultural Welfare State: Institutions and Interest Group Power in the United States, France, and Japan*. Princeton: Princeton University Press, 2001.
- Shideler, James. *Farm Crisis, 1919-1923*. Berkeley: University of California Press, 1957.
- Shover, John L. *First Majority, Last Minority: The Transforming of Rural Life in America*. De Kalb: Northern Illinois University Press, 1976.
- Skaggs, Jimmy M. *Prime Cut: Livestock Raising and Meatpacking in the United States, 1607-1983*. College Station: Texas A & M University Press, 1986.
- Skocpol, Theda. *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States*. Cambridge, MA: Belknap Press, 1992.
- _____. and Kenneth Finegold. "State Capacity and Economic Intervention in the Early New Deal." *Political Science Quarterly*, 97 (Summer 1982): 255-78.
- Skowronek, Stephen. *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920*. Cambridge: Cambridge University Press, 1982.

- Smith, Henry Nash. *Virgin Land: The American West as Symbol and Myth*. Cambridge, MA: Harvard University Press, 1950.
- Smith, Merritt Roe. *Harpers Ferry Armory and the New Technology: The Challenge of Change*. Ithaca: Cornell University Press, 1977.
- _____, and Leo Marx, eds. *Does Technology Drive History?: The Dilemma of Technological Determinism*. Cambridge, MA: MIT Press, 1994.
- Soluri, John. "Accounting for Taste: Bananas, Mass Markets, and Panama Disease." *Environmental History* 7 (Jul. 2002): 386-410.
- Sonnichsen, Charles L. *Cowboys and Cattle Kings: Life on the Range Today*. Norman: University of Oklahoma Press, 1950.
- Stanley, Kathleen. "Industrial and Labor Market Transformation in the U.S. Meatpacking Industry." In *The Global Restructuring of Agro-Food Systems*. Edited by Philip McMichael. Ithaca: Cornell University Press, 1994. Pp. 129-44.
- Staudenmaier, John M. *Technology's Storytellers: Reweaving the Human Fabric*. Cambridge, MA: MIT Press, 1985.
- Sternberg, Earnest R. *A History of Motor Truck Development*. Warrendale, PA: Society of Automotive Engineers, 1981.
- Stilgoe, John R. *Metropolitan Corridor: Railroads and the American Scene*. New Haven: Yale University Press, 1983.
- Stock, Catherine McNicol, and Robert D. Johnston, eds. *The Countryside in the Age of the Modern State: Political Histories of Rural America*. Ithaca: Cornell University Press, 2001.
- Stoll, Steven. *The Fruits of Natural Advantage: Making the Industrial Countryside in California*. Berkeley: University of California Press, 1998.
- Stover, John F. *The Life and Decline of the American Railroad*. New York: Oxford University Press, 1970.
- Strasser, Susan. *Satisfaction Guaranteed: The Making of the American Mass Market*. New York: Basic Books, 1989.
- Stull, Donald D., and Michael J. Broadway. "The Effects of Restructuring on Beefpacking in Kansas." *Kansas Business Review*, 14 (Fall 1990): 10-6.
- Stull, Donald D, Michael J. Broadway, and David Griffith, eds. *Any Way You Cut It: Meatprocessing and Small-Town America*. Lawrence: University Press of Kansas, 1995.
- Taylor, George. *The Transportation Revolution, 1815-1860*. New York: Rinehart, 1951.
- Tedlow, Richard S. *New and Improved: The Story of Mass Marketing in America*. New York: Basic Books, 1990.
- Thomas, James Harold. *The Long Haul: Truckers, Truck Stops, and Trucking*. Memphis: Memphis State University Press, 1979.
- Thompson, E. P. "Time, Work-Discipline, and Industrial Capitalism." *Past and Present*, 38 (Dec. 1967): 56-97.
- Thornton, Tamara Plakins. *Cultivating Gentlemen: The Meaning of Country Life among the Boston Elite, 1785-1860*. New Haven: Yale University Press, 1989.
- Tichi, Cecilia. *High Lonesome: The American Culture of Country Music*. Chapel Hill: University of North Carolina Press, 1994.
- Tilley, R. P. R., and R. Hicks. "Economies of Scale in Supermarkets." *Journal of Industrial Economics* 19 (Nov. 1970): 1-5.
- Tobey, Ron, and Charles Weatherell. "The Citrus Industry and the Revolution of Corporate Capitalism in Southern California, 1887-1944." *California History* 74 (Spring 1995): 6-21.
- Trenkle, Allen, and R. L. Willham. "Beef Production Efficiency." *Science* 198 (Dec. 1977): 1009-15.
- Tugwell, Franklin. *The Energy Crisis and the American Political Economy: Politics and Markets in the Management of Natural Resources*. Stanford: Stanford University Press, 1988.
- Usselman, Steven W. *Regulating Railroad Innovation: Business, Technology, and Politics in America, 1840-1920*. New York: Cambridge University Press, 2002.
- Vietor, Richard H. K. *Contrived Competition: Regulation and Deregulation in America*. Cambridge, MA: Harvard University Press, 1994.
- Vittoz, Stanley. *New Deal Labor Policy and the American Industrial Economy*. Chapel Hill: University of North Carolina Press, 1987.
- Vosko, Leah F., and David Witwer. "'Not a Man's Union': Women Teamsters in the United States during the 1940s and 1950s." *Journal of Women's History* 13 (Fall 2001): 169-92.

- Waksman, Steve. *Instruments of Desire: The Electric Guitar and the Shaping of Musical Experience*. Cambridge, MA: Harvard University Press, 1999.
- Walker, Melissa. *All We Knew Was to Farm: Rural Women in the Upcountry South, 1919-1941*. Baltimore: Johns Hopkins University Press, 2000.
- Walsh, Margaret. *The Rise of the Midwestern Meat Packing Industry*. Lexington: University Press of Kentucky, 1982.
- Warner, W. Keith. "Rural Society in a Post-Industrial Age." *Rural Sociology* 39:3 (1974): 306-18.
- Warner, Jr., Sam Bass. *Streetcar Suburbs: The Process of Growth in Boston, 1870-1900*. Cambridge, MA: Harvard University Press, 1962.
- Whitaker, James. *Feedlot Empire: Beef Cattle Feeding in Illinois and Iowa, 1840-1900*. Ames: Iowa State University Press, 1975.
- White, Jr., John H. *The American Railroad Freight Car: From the Wood-Car Era to the Coming of Steel*. Baltimore: Johns Hopkins University Press, 1995.
- Wildenbeest, Gerrit. "'Keeping up with the Times': Time and Its Rhythms in the Countryside." *Netherlands Journal of Social Sciences* 24 (Oct. 1988): 132-45.
- Wiebe, Robert. *The Search for Order, 1877-1920*. New York: Hill and Wang, 1967.
- Williams, Robert C. *Fordson, Farmall, and Poppin' Johnny: A History of the Farm Tractor and Its Impact on America*. Urbana: University of Illinois Press, 1987.
- Williams, Sheldon W., et al. *Organization and Competition in the Midwest Dairy Industries*. Ames: Iowa State University Press, 1970.
- Willis, Paul E. *Learning to Labor: How Working Class Kids Get Working Class Jobs*. New York: Columbia University Press, 1981.
- Winner, Langdon. *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press, 1986.
- Wise, M. Norton, ed. *The Values of Precision*. Princeton: Princeton University Press, 1995.
- Witwer, David. *Corruption and Reform in the Teamsters Union*. Urbana: University of Illinois Press, 2003.
- Woeste, Victoria Saker. *The Farmer's Benevolent Trust: Law and Agricultural Cooperation in Industrial America, 1865-1945*. Chapel Hill: University of North Carolina Press, 1998.
- Wolfe, Alan. *America's Impasse: The Rise and Fall of the Politics of Growth*. New York: Pantheon Books, 1981.
- Wood, Charles L. *The Kansas Beef Industry*. Lawrence: University Press of Kansas, 1980.
- Worster, Donald. *Dust Bowl: The Southern Plains in the 1930s*. New York: Oxford University Press, 1979.
- Wright, Gavin. *Old South, New South: Revolutions in the Southern Economy since the Civil War*. New York: Basic Books, 1986.
- _____. *The Political Economy of the Cotton South: Households, Markets, and Wealth in the Nineteenth Century*. New York: W. W. Norton, 1978.
- Wyckoff, D. Daryl. *Truck Drivers in America*. Lexington: Lexington Books, 1979.
- _____, and David H. Maister. *The Owner-Operator: Independent Trucker*. Lexington: Lexington Books, 1975.
- Wyckoff, William. *Creating Colorado: The Making of a Western American Landscape, 1860-1940*. New Haven: Yale University Press, 1999.
- Yaney, George. *The Urge to Mobilize: Agrarian Reform in Russia, 1861-1930*. Urbana: University of Illinois Press, 1982.
- Yeager, Mary. *Competition and Regulation: The Development of Oligopoly in the Meat Packing Industry*. Greenwich, CT: Greenwood Press, 1981.
- Zelizer, Julian E. *Taxing America: Wilbur D. Mills, Congress, and the State, 1945-1975*. Cambridge: Cambridge University Press, 1998.
- Zunz, Olivier. *Making America Corporate, 1870-1920*. Chicago: University of Chicago Press, 1990.



Room 14-0551
77 Massachusetts Avenue
Cambridge, MA 02139
Ph: 617.253.5668 Fax: 617.253.1690
Email: docs@mit.edu
<http://libraries.mit.edu/docs>

DISCLAIMER OF QUALITY

Due to the condition of the original material, there are unavoidable flaws in this reproduction. We have made every effort possible to provide you with the best copy available. If you are dissatisfied with this product and find it unusable, please contact Document Services as soon as possible.

Thank you.

Some pages in the original document contain pictures or graphics that will not scan or reproduce well.